

REAUTHORIZATION OF THE CLEAN WATER ACT

Y 4. P 96/10: S. HRG. 103-328

Reauthorization of the Clean Water... **INGS**
... THE
SUBCOMMITTEE ON
CLEAN WATER, FISHERIES, AND WILDLIFE
OF THE
COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
UNITED STATES SENATE
ONE HUNDRED THIRD CONGRESS

FIRST SESSION

ON

S. 1114

**A BILL TO AMEND AND REAUTHORIZE THE FEDERAL WATER
POLLUTION CONTROL ACT, AND FOR OTHER PURPOSES**

AND

S. 1302

**A BILL TO AMEND THE FEDERAL WATER POLLUTION CONTROL ACT TO
IMPROVE THE CONSERVATION OF WETLANDS AND THEREBY RE-
STORE AND MAINTAIN THE PHYSICAL, CHEMICAL, AND BIOLOGICAL
INTEGRITY OF THE NATION'S WATERS, AND FOR OTHER PURPOSES**

JUNE 16, 23; JULY 1, 14, 27; AUGUST 4, 5; AND SEPTEMBER 15, 1993

Printed for the use of the Committee on Environment and Public Works



MAR 9 1994

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BEFORE THE
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U.S. GOVERNMENT PRINTING OFFICE

69-677

WASHINGTON : 1993

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402

ISBN 0-16-043358-4

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REAUTHORIZATION OF THE CLEAN WATER ACT

WEDNESDAY, JUNE 16, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

THE CLEAN WATER ACT IN GENERAL

The subcommittee met, pursuant to notice, at 9:35 a.m. in room SD-406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Lieberman, Lautenberg, Chafee and Metzenbaum.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. I will call the meeting to order.

Today, the subcommittee on Clean Water, Fisheries and Wildlife begins a series of hearings on legislation to reauthorize the Clean Water Act. It is an ambitious schedule of hearings over the next 8 weeks. Our hearings will cover the most significant issues that remain to be addressed in the Act. We will invite witnesses with divergent views and we will use the bill filed yesterday by Senators Baucus and Chafee to guide our discussions.

Today, we will not focus, to any great extent, upon that bill for two reasons. First, it has just been filed and it hardly seems fair to expect our witnesses to have so quickly digested its provisions. More importantly, there are some fundamental issues that I believe need to be explored.

At earlier hearings of this committee regarding the Clean Water Act, I suggested that we are like the person who owns an automobile who is drawn into a detailed examination of the transmission without ever stepping back to ask the fundamental questions, why he owns the automobile and what is his destination? During the next two months, this subcommittee will have ample time to look at the hood, to examine the transmission, and to decide whether to tune the engine or change the oil.

Today, we focus on purpose and destination. The goals of the Clean Water Act in 1972 were ambitious, to assure that our Nation's waters were fishable and swimmable by 1984 and to eliminate the discharge of pollutants into the Nation's waters by 1985. We've come a long way, especially with respect to the treatment of sewage, but we have failed to meet these goals.

Today, a third of our waters still fail to meet their designated water quality. We've imposed significant controls over toxics and other pollutants from industrial dischargers and now find that between one-third and two-thirds of our remaining pollution comes from nonpoint sources. So it is time, 21 years later, to reexamine these goals.

I also believe it is appropriate to examine the appropriate Federal role in meeting these goals. Back in 1972, the national debt was \$436 billion. The Congress was more free to decide how it might wish to spend Federal dollars toward the goal of protecting the chemical, biological and physical integrity of the Nation's waters. Today, the national debt is not \$436 billion but is \$4.4 trillion, over ten times the figure of 1972. We are being asked today to do more with fewer Federal resources.

A fundamental question is what is the Federal Government's role in relationship to the States and local communities? At what point should the Federal Government insist on its values and what is its responsibility to accept the financial ramifications when it does so? I believe we must carefully assess what we can reasonably expect to accomplish and how we can best assist our States, cities and our citizens in assuring that our Nation's waters are safe and that our environment is protected.

I also want to explore the manner in which we hold our Federal agencies accountable for their administration of these programs. We have elected a President who wishes to reinvent government. Part of reinventing government is to establish a clear set of goals for governmental programs—if at all possible, goals which are quantifiable—and then to establish procedures to measure the attainment of those goals in relation to the tax dollars expended to achieve them.

When I first began to study the Clean Water Act and the many issues that face us, I was struck by how difficult it is for EPA or anyone else to tell us exactly how successful the Act has been. We certainly know anecdotally that many of our rivers, lakes and streams are cleaner than they were 20 years ago. Certainly none have caught fire lately, but I am troubled by the absence of baseline measurements and by the fact that we collect a great deal of data that fails to answer the questions a decisionmaker needs to ask.

It is my hope that we can use this opportunity of reauthorizing the Clean Water Act to help the agency set specific program goals and then put in place the means to measure performance and achievement of those goals. In the past, the EPA has measured its success by how many permits or effluent guidelines it has issued. Instead, Congress and the public need to know how much cleaner our lakes, rivers and streams have become. We need also to know that we are addressing those problems that pose the greatest risk to human health and to the health of our ecosystems.

We begin our journey with the Administrator of the Environmental Protection Agency, Carol Browner. Ms. Browner is an American that I have known for many years and I can say without qualification that Nation is fortunate to have her in its service. It seems to me appropriate to discuss these fundamental issues with her and to learn of the issues which her agency believes remain to

be addressed. She will be followed by a panel of distinguished scientists whose testimony I hope will help the subcommittee understand the importance and direction of this Act.

In 1991, EPA asked a panel of scientists, headed by Dr. Bill Cooper, to explore how reauthorization of the Clean Water Act could be used to address existing environmental problems that are critical to the long-term, economic, ecological and human health components of the quality of our lives. They were asked to identify and rank the most important environmental risks affecting our aquatic ecosystems.

While that report did not result in legislation by EPA in 1991, it remains topical today in its identification of those issues that remain for our attention. We hope to generally explore some of those issues today.

It is also my hope that we can learn from them what we know and do not know about the health of our waters. We seek knowledge that will guide us as we explore the difficult issues that will face us over these hearings this summer. Have we done enough to protect the waters from toxic substances? Do we need to focus more upon nonpoint source pollution? Should we shift greater resources and attention to pollution prevention? How can we balance competing interests regarding wetlands? How do we help our cities address their vast infrastructure problems? Should we shift our focus to watershed management?

Our challenge is daunting and the issues are complex. I look forward to working with the members of the subcommittee over the next eight weeks.

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S.
SENATOR FROM THE STATE OF NEW JERSEY**

Senator Lautenberg?

Senator LAUTENBERG. Thank you very much, Mr. Chairman, and welcome, Ms. Browner.

Today, we begin the important task of revisiting the Clean Water Act. We've made a lot of progress over the last few decades in cleaning up our waters. Fortunately, they no longer catch on fire, the fish are returning largely to our Nation's waters and raw sewage is no longer indiscriminately pumped into our waterways.

Yet, significant problems remain. We have barely begun to address the problems caused by urban and agricultural runoff which is responsible for a large portion of our remaining pollution. Industry continues to pour poisons into our waters which sewage treatment plants are not designed to control. Overflows of combined sanitary and storm sewers pollute our estuaries with raw sewage, toxic chemicals and garbage which winds up on our coastal beaches. We have over \$100 billion in sewage treatment needs.

Yet, with the defeat of President Clinton's stimulus package, we now face the prospect of reductions in sewage treatment funding for 1994. We still have startling high levels of significant noncompliance with the Act and too often, it's cheaper for the polluters to violate their permits than to pay the penalties which are being charged.

While one of the goals of the Act is to make our waters swimmable, we still have no meaningful program to ensure that those waters are safe for swimming, certainly not on a universal basis. So the results are not surprising.

In 1990, one-third of our rivers, lakes, and estuaries, which have been assessed throughout the country, either are failing to achieve or are threatened with failing to achieve water quality levels which would support uses such as swimming and fishing. States issued 998 fish advisories and established 50 bans on fish consumption. Nearly 26 million fish were killed by pollution in over 1,000 instances. Over 2,000 square miles of shellfish harvesting restrictions were in effect and 300 beach closures were reported by 20 States because of bacteria from sewage treatment plants, combined sewage overflows and urban runoff. This only includes States that monitor beach water quality.

It's clear that despite our past successes, we cannot afford to reduce our commitment to clean up our waters. We're going to need to strengthen the Clean Water Act and I'm pleased that Administrator Browner joins us today to help us in this effort.

When the Congress last passed the amendments to the Clean Water Act in 1987, we faced serious opposition from the Reagan Administration and had to pass the bill over the President's veto. With Administrator Browner's commitment to work with us to address the challenges we have to address in this reauthorization, I'm encouraged that we are going to be able to get the job done.

Mr. Chairman, the people in my State and across the Nation understand that clean water is essential to human life. They want us to make the commitment to rid our waters of bacteria and toxic garbage. Clean water also is essential for our economic well-being. The New Jersey shore is a driving force behind our \$18 billion tourism sector. Certainly, Mr. Chairman, your State and my colleague from Connecticut, both have very significant vested interests in tourism and high water quality.

The tourism business is the second largest revenue producer in my State. In 1991, almost 9 million people, 8.8 million people, stayed overnight at the shore and an additional 59 million made day trips to New Jersey beaches. Further, there were over 350,000 people who serviced these visitors in some capacity, making tourism the number one employer in my State.

Therefore, Mr. Chairman, I look forward to working with you, the committee Chairman, Mr. Baucus, and the committee on this reauthorization. Consistent with New Jersey's key concerns, I urge the committee to work to ensure needed levels of sewage treatment funding as well as the programs needed to correct the problems of combined sewer overflows. In addition, I'm going to seek enactment of provisions to improve enforcement and mandate the testing of waters off our recreational shores.

I want to assure you, Mr. Chairman, of my commitment to work for a bill which will address the remaining water challenges and I commend you for holding this hearing.

Senator GRAHAM. Thank you very much, Senator.
Senator Lieberman?

OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S.
SENATOR FROM THE STATE OF CONNECTICUT

Senator LIEBERMAN. Thank you, Mr. Chairman.

We begin today along march not unlike that we began a few years ago in the reauthorization of the Clean Air Act and I am hopeful and confident that under your leadership we will complete this effort as successfully as we completed that one with equally important consequences for our society.

I commend you, Mr. Chairman, for casting this first hearing on the reauthorization of the Clean Water Act, as an opportunity to identify the present quality of the Nation's waters to imagine where we would like to be and then to determine the steps we can take to bridge the distance between our goals and the reality.

I look forward to hearing from Administrator Browner as to what the Clinton Administration most values in the Clean Water Act and I join you in welcoming the distinguished panel of scientists you've invited to educate us further.

Mr. Chairman, you and I, and Senator Lautenberg, come from coastal States where people tend to define their communities by their proximity to the water and often think in very possessive terms of our beaches, our coves, our bays, our inlets, or our inland waterways. The health of each of these waterways determines, in important ways, the health of our communities and, because we are so close the water, we can more readily and immediately see the effects of water pollution.

Birds and other wildlife start to disappear as their habitat is diminished. Shellfish and finfish can no longer be harvested in the same abundance. Boaters begin to complain about unpleasant water conditions and bathers are kept from the beach. So water pollution is not just an aesthetic threat, it is a threat to human health and, as my colleague from New Jersey has said, it cuts directly into the economies of our States. The degradation of a large body of water diminishes the quality of life of those who live near it.

I must say that I was particularly interested in the Form of Scientists Report, which is the focus of this hearing's second panel, that coastal areas are precisely where the rate of erosion of the world's biodiversity is occurring fastest. I was also impressed that the panel would note that the human values derived from an intact biodiversity "range from medicine and biological control agents to tourist economies and spirited belief systems." That such a distinguished panel of scientists would note the linkage of water quality with the quality of both our physical and spiritual well-being gives us another reason, should we need one, Mr. Chairman, for a strong reauthorization of the Clean Water Act.

The report before us expands our notions of what cleaning up the Nation's waters really means. It cautions us to think of rivers, for example, as not simply channels through which water passes, but as part of an ecosystem. The river's health may be as dependent on what remains of the vegetation on its banks as it is on which industrial plants use it for discharge.

The report reminds us that it was not just the chemical but also the physical and biological integrity of the Nation's waters that

Congress sought to restore in the 1972 law. That means rethinking the impact of physical alterations to river and stream flow, for example. Again, it requires considering changes in terrestrial activities—if I can use that term—that impact upon the Nation's waters.

Simply stated, dams kill fish too by altering water temperature, changing the pattern and speed of a river's flow, physically preventing the fish from returning to spawn up river. Similarly, urban sprawl exacerbates stormwater runoff by paving over permeable land and replacing it with new roads, parking lots and the waste from construction sites, all to be washed into the nearest stream or pond.

Wetlands receive particular notice in this context. Their functional values of stormwater retention, pollutant and sewage filtering and flood prevention all must be replaced by artificial means, which again costs the taxpayers dearly.

So the report before us makes clear that while we have come a long way toward realizing some of the objectives of the 1972 law, there are new objectives that have really only just begun to be clear to us, problems that were not addressed in 1972 because we did not know their impact on us in 1972 such as the cumulative effect of the releases of toxic chemicals into our Nation's waterways or what happens when toxics accumulate in sediment or work their way into the water column or up the food chain.

Mr. Chairman, 20 years ago, to bring this home for me, the Connecticut River was known as "the prettiest sewer in America." Last year, salmon spawned in the Connecticut River and that shows the value of the Clean Water Act of 1972. Congress made a commitment to this country when it passed the Clean Water Act. We improved upon and made good on that commitment with the Water Quality Amendments of 1987 and now, we have the opportunity under your leadership to address the problems which remain.

These will be more difficult because nonpoint source pollution, for example, is less discreet, more varied and variable than point source pollution. Restricting certain activities on land are much more troublesome than rewriting effluent guidelines or permits. Acknowledging that toxics build up in our near coastal sediments is more alarming than committing only to further study.

So it will be harder this time around, Mr. Chairman, because we have some real choices to make. I think it will be made easier only if we agree on the premise which I believe we do, that clean water is a critical and widely held value in our country among our constituents.

Mr. Chairman, I want to thank you for calling this hearing. I look forward to the testimony of our witnesses and I look forward to working with you on this reauthorization.

Senator GRAHAM. Thank you very much, Senator.

Our first witness is the Administrator of the Environmental Protection Agency, Ms. Carol Browner. Ms. Browner?

STATEMENT OF HON. CAROL M. BROWNER, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY MARTHA PROTHRO, ACTING ASSISTANT ADMINISTRATOR FOR WATER, ENVIRONMENTAL PROTECTION AGENCY

Ms. BROWNER. Good morning, Mr. Chairman and members of the subcommittee. I am pleased to be here.

Accompanying me today is Martha Prothro, Acting Assistant Administrator for Water with the Environmental Protection Agency.

I applaud you, Mr. Chairman, and the committee for undertaking this series of hearings. I think it will be extremely informative as we move forward together, I hope, in the reauthorization process. I think the committee has already demonstrated leadership as it has undertaken to draft what I believe will ultimately be a focused, effective and realistic legislation to reauthorize the Clean Water Act.

I think we all understand that the task before us is a very difficult one because, although the Act is fundamentally sound, the challenges that we face today are more subtle and perhaps more elusive to traditional legislative and regulatory solutions than the challenges we faced in the 1970's and 1980's. Today, we need new and innovative approaches to complement the existing array of successful tools and programs we already have to protect human health and the environment.

Although I have not yet had an opportunity to review in great detail the bill introduced yesterday by Senators Baucus and Chafee, I do believe, as I understand it, that it generally focuses upon the themes that need to be addressed. I am pleased that the bill acknowledges the importance of developing effective controls on polluted runoff which is the leading problem facing our Nation's waters today.

I also want to thank the Subcommittee and the full committee for involving the Environmental Protection Agency staff in your deliberations on the technical aspects of the development of this bill. We welcome the spirit of cooperation and believe that our involvement demonstrates not only the administration's support of this endeavor but also that we share the view that reauthorizing legislation must be focused, realistic and implementable.

I would like to begin by briefly commenting on the role of the Federal Government in regulating and funding to protect and enhance our Nation's water quality.

As you all are aware, Congress passed the Federal Clean Water Act in the early 1970's in part to assure that individual States would not be economically disadvantaged by efforts to protect public health and ecological resources. The Act recognized that States and localities should continue to be the primary implementors of water quality programs. At the same time, the Act reinforced a strong national interest in public health and ecosystem protection and, therefore, a need for Federal support of State programs. Out of this vision grew a partnership among local authorities, States and the Federal Government which remains very strong and viable today.

Over its 20 years of implementation, the Clean Water Act is widely regarded as one of our best environmental statutes. Its

broad and flexible authorities have made the Act one of the easiest laws to implement, manage and enforce. I believe it has delivered perhaps some of the most important environmental impacts of all of our statutes and I think the example used by Senator Lieberman is one that we can point to in many instances across this country. Twenty years ago, we did have rivers, lakes and streams on fire in this country. We don't have that situation today. We have made progress, but there is the need for more progress.

I look forward to working with the Subcommittee in making further refinements to the Act. I believe that we are off to a good start.

Today, I would like to focus on five critical issues that it would certainly be our hope will be thoroughly considered during this hearing process and in the final product that leaves the committee and moves forward to the full Senate.

First and foremost is funding. Funding is one of the most critical issues in the Clean Water Act reauthorization. As we address the remaining threats to our waters, we must recognize that new initiatives place a significant increased burden on State and Federal water quality protection programs. Without adequate funding, State and local water and wastewater programs will not be able to fulfill the mandates of the Act or meet the expectations of the public. We need to ensure that adequate resources are available and available for the right purposes.

Long ago, Congress recognized the inextricable link between adequate funding and water quality achievements. In 1981, the Federal Government committed to a 10-year program of \$2.4 billion per year to finance construction of municipal wastewater treatment facilities under the Act's Title II Construction Grants Program. This level of funding was considered adequate to meet the estimated remaining highest priority needs. Other major needs such as correction of combined sewer overflows were not fully considered at that point in time.

In 1987, Congress established the State Revolving Fund Program in an effort to provide long-term financial assistance for municipal wastewater infrastructure needs and phased out the Title II Construction Grant Program. A total of \$18 billion was authorized for both of these programs through fiscal year 1994.

The transition from the Title II Construction Grant Program to the Title VI State Revolving Fund Program, I think, has essentially gone well. All States now have approved programs and are receiving their capitalization grants. Over \$7 billion of Federal capitalization funds and \$6 billion of State matching funds and bond proceeds have been made available for needed wastewater projects. More than 1300 municipalities have received low interest loans through the State Revolving Fund.

Every two years, EPA undertakes a needs survey. Although we have not yet published the data from the 1992 survey of the States, preliminary estimates confirm that the needs continue to grow. Total documented needs have increased in constant dollars from \$90 billion in 1988 to \$108 billion in 1992. As daunting as these figures are, there is reason to believe that some needs may be seriously underestimated in that analysis.

EPA, States and localities are still determining how to meet the Act's requirements for combined sewer overflows, stormwater management, and nonpoint source pollution control. States and local communities will not be able to meet these challenges without continued Federal support.

Investment in our natural resources not only reflects our obligation to act as stewards of our environment, to hold the environment in trust for our children, but also represents sound economic policy. I believe we need to improve our ability to address current water quality problems. We should support community investments in more efficient water use. We expect water safe enough to swim in, to fish from and to drink, and we expect healthy and diverse populations of plants and animals in our lakes, streams, wetlands, estuaries and oceans. Consequently, we must also expect to address the cost incurred by States, municipalities and Federal agencies to treat our wastewater.

The second issue I would like to address is watershed planning. The principal goal of the Act is to protect and restore water body uses by ensuring their biological, chemical and physical integrity. As the water program matures, we are expanding our focus beyond a simple emphasis on chemical pollution to one that provides a greater understanding of ecosystems.

EPA strongly supports what we call the watershed protection approach. By focusing on the watersheds as a whole, we believe that we can address problems more comprehensively, efficiently and effectively and at the same time, take better advantage of the energy and resources of our public and private partners.

The watershed approach is not new to EPA. This approach has been effectively used in several geographically targeted programs, including the National Estuary Program and initiatives focusing on the Great Lakes, the Gulf of Mexico, and the Chesapeake Bay Program to name a few.

We need to provide incentives to the States to voluntarily develop watershed plans for all impaired and threatened waters as well as waters that merit special protection or restoration, such as outstanding national resource waters, wetlands and drinking water supplies. Incentives could include rewarding watersheds for which a State has completed watershed planning with higher priority for SRF funding, harmonizing reporting requirements, and allowing States greater flexibility in developing site-specific pollutant runoff control plans.

We must also apply a similar approach for the Nation's ground water. Eighty-nine percent of our Nation's community water systems rely on ground water. Eighty-six percent of small and very small systems serving fewer than 3300 people rely on ground water as a source of drinking water. Given the hydrological link between ground water and surface waters, the Clean Water Act should expressly recognize protection of public water supplies and ecologically important ground water as a goal of the Act.

We have also overlooked our urban waterways. I firmly believe we have an obligation as a country to return these waterways to their communities for recreation and other uses. The Anacostia River, as I think many of us know, was recently named one of the Nation's most polluted water bodies. It's right down the street. This

river belongs to the people who live in Anacostia, who work in the communities adjacent, who want to recreate in those waters. We need to give it back to the people so that they can enjoy it.

Similarly, we have also overlooked the needs of disadvantaged communities. We must work to ensure greater environmental equity, particularly among the subpopulations of pregnant women, children, Native, ethnic and minority groups.

We should also address the special needs and water quality demands of interstate waters. Water doesn't recognize political boundaries. Many water bodies are shared by one or more States. We need to recognize that; we need to bring together States so that we can do the very best to protect those shared resources.

Wetlands also are critical components of healthy watersheds. We must include wetlands restoration and enhancement as part of our overall watershed protection strategy. EPA is working with other Federal agencies, States, local governments and private landowners to encourage a better understanding of wetlands restoration protection and to deal with some of the problems that have been raised with regard to the 404 Program.

Polluted runoff, which is the contaminated runoff from agricultural lands, grazing and forestry operations, urban areas and commercial activities, is one of the Nation's most vexing water quality problems. Much of the most serious nonpoint source pollution comes from agricultural runoff, including crops, grazing and animal waste. Problems are particularly acute in rural areas of intense agricultural activity where excessive fertilizer use and other activities have been linked to ground water contamination.

We already possess some tools to help. Section 319 of the Act enacted in 1987 required States to assess their nonpoint source pollution problems and to develop programs for managing nonpoint source pollution backed by Federal grants. Over the last four years, we have provided both technical assistance and more than \$190 million in financial assistance to help States with approved nonpoint management programs to provide technical assistance, education and implementation of best management practices. We believe that we are making progress with these and other tools.

At this stage, I believe there are several basic principles that should guide our discussions of the problem of polluted runoff. Specifically, State nonpoint source management programs based on effective local participation should be strengthened. EPA should help to set clearer technical baselines for nonpoint source controls and management practices. We must improve our scientific understanding of the means to control problems such as nutrient and filtration pollution and improve the tools to address them, working closely with other Federal agencies such as NOAA, the U.S. Department of Agriculture, the Department of Interior and the Department of Transportation.

A stronger watershed focus should be brought to bear so that farmers, foresters and other stakeholders can better understand the connection between what they do on their land and the benefits they can help to bring to water quality.

We should encourage innovation, where appropriate, including public-private partnerships and greater use of market-based incentives. Federal funding should support State and local actions but

should not be a prerequisite to accelerating progress. We should implement nonpoint source programs on large tracts under the stewardship of Federal land management agencies. Where feasible, pollution prevention should be the approach of first choice for addressing polluted runoff. Voluntary target approaches should remain the primary focus but backup enforcement requirements at the State and Federal levels are needed when voluntary approaches fail to produce adequate incentives and necessary environmental improvements.

Although I have addressed problems that have been overlooked in the past, I think we also need to be reminded that toxic pollutants remain a critical threat to our Nation's waters despite our substantial progress over the last two decades. In the water program, as in all environmental programs, the traditional end-of-the-pipe approaches have often served us well and have been the driving force behind the significant water quality gains of the past.

However, we have learned that treatment and disposal are simply not enough if we wish to continue to make progress. A more comprehensive prevention-oriented approach, coupled with a strong base program, will allow us to move more effectively toward meeting the overall goals of the Clean Water Act. I believe this is particularly important if we are to achieve additional reductions in the discharge of toxics.

We would like to explore ways to help larger dischargers develop pollution prevention plans tailored to their specific industries. We also believe the statute should be amended to discourage controls that simply transfer pollutants from one media to the next. Pollution prevention approaches can produce permanent solutions to environmental problems, solutions that require less investment in expensive pollution control and greater emphasis on good planning and strategic designs. Prevention, in fact, may be the most cost-effective way to address many of the remaining sources of water pollution while complementing the watershed approach.

Finally, a vigorous enforcement program must remain an integral component of successful Clean Water Act implementation. We believe the Act can be strengthened to improve our enforcement authority and ultimately to enhance State and Federal administration of water quality programs. A strengthened enforcement program will allow us to respond more effectively to the facilities that are not in compliance with the requirements of the Act.

In conclusion, Mr. Chairman and members of the subcommittee, reauthorization of the Clean Water Act provides us with a valuable opportunity to focus on the most important problems facing our Nation's waters. We believe control of polluted runoff is a critical component of an amended Clean Water Act. We also believe that adopting a watershed approach to protect the biological and physical as well as the chemical integrity of our Nation's waters is very important. Similarly, we must recognize that we need to increase our emphasis on pollution prevention as the most practical and cost-effective means of meeting the goals of the Act. Finally, we must help ensure that funding is available to States and municipalities to enable them to execute the responsibilities and obligations that the Act entrusts to them.

I recognize that I have described a large task, but our Nation's waters and our Nation's citizens demand that we address these problems, that we face—and not ignore—the challenge.

I look forward to working with the Subcommittee and the full Committee as we move forward in this process.

Again, I appreciate the opportunity to be here today.

Senator GRAHAM. Thank you very much for that extremely helpful, thoughtful analysis of history and the future.

Senator Lautenberg?

Senator LAUTENBERG. If I might be excused and be permitted to submit questions for the record?

Senator GRAHAM. Senator Lautenberg, if you would like to ask any questions at this time before you have to leave, I would be pleased to defer to those questions.

Senator LAUTENBERG. Mr. Chairman, your kindness is well-known and emphasized today. I'll even decline that generous opportunity, if I might. I have another subcommittee that I've got to attend.

Thank you very much.

Senator GRAHAM. Thank you, Senator.

Ms. Browner, as I indicated in my opening statement, I am interested in talking about some first purpose questions here. High on that list is the fundamental rationale for the current level and the proposed future level of Federal involvement in this issue.

Traditionally, water has been a State responsibility. The States have jealously guarded their rights to determine quantity allocations of water and most other ramifications. In 1972, when the first Clean Water Act was passed, there was sufficient evidence that responsibility was not being discharged adequately, with dramatic examples of highly polluted water and that the national interest was being affected.

There was also, as you suggest, the concern about competitiveness among the States, that the States might be competing to see who had the worse water quality standards in order to gain the economic advantages of that.

We also were at a point in time where the State governments were just beginning to establish competencies in effective environmental control. Our own State of Florida had just five years prior to 1972 established its first pollution control agency and the Federal Government was in a financial situation and status in which it could make fairly generous commitments to this as well as other environmental programs.

Much of that history of 21 years ago has altered. So the question I have is, in the context of 1993, what do you feel is the rationale and what should be the touchstone as we come to the various vexatious issues from wetlands control to toxics that we should repair to in terms of justifying the Federal involvement?

Ms. BROWNER. Mr. Chairman, I would make two points in response to your question.

The first is, again, to recognize the need to maintain the flexibility and the partnership between the Federal Government and the State and local governments that has been created in the Clean Water Act. I think that while there are changes and corrections we would like to see made, most people would agree in general that it

has been a successful partnership and that it has been bringing all parties to the table to develop programs that seek to address the concerns of individual States and local or regional components of that State.

In terms of the Federal Government's financial commitment—obviously we are dealing in difficult financial times with a very large deficit—the President, in his Vision for America budget, has called for a Clean Water State Revolving Fund because he recognizes, I think in part as a former Governor, the need to assist our States and municipalities as they come into compliance with the Federal standards and that we should provide those funds to them. While there are some cities that in fact may be able to deal with these issues outside of the SRF, there are many small and medium-sized communities that will not be able to deal with these problems without some Federal support, and that is an appropriate role for the Federal Government to play.

Senator GRAHAM. You talk about partnership, I described historically what the States' role has been relative to water policy, what do you think are the fundamental characteristics of the Federal role in that State-Federal partnership?

Ms. BROWNER. I think it's to provide a framework within which the States can act. You made some very significant comments in your opening statement, Mr. Chairman, about the data. We recognize at EPA that we have a challenge in terms of better managing the data, being better able to provide a snapshot to individual States and to the country as a whole in terms of water quality. That is something that we think we can do. We are seeking to address those concerns and that would be sort of a piece of the puzzle that we bring to the table.

What States are uniquely qualified to do is to develop the local plans. I think if you look at the National Estuary Program, it's a very good example of where you bring that partnership together—Federal, State and local government—with each one bringing their set of tools to the table to look at a watershed in its entirety, to develop a solution and to seek to implement that solution.

Senator GRAHAM. It's been suggested that if the Federal Government is going to be imposing some of its values on State and local communities that it is a necessary corollary that the Federal Government provide a significant amount of the funding to pay the cost of reaching those values.

Do you agree that there is that linkage and do you believe that the current level of Federal financial support is adequate to fulfill the Federal responsibility?

Ms. BROWNER. I believe that we all share the water resources of this country and that it is important that the Federal Government look across the country at the whole in establishing the framework for protecting those waters and for improving the quality of those waters. I believe that it is appropriate for us to provide funds to States as they seek to come into compliance.

The level of funding that the President has called for in terms of the State Revolving Fund, we believe, is an appropriate level of funding. The needs are tremendous. As I said earlier, we estimate—and we have not published the final report yet, but in terms of the recent survey—that there are \$127 billion in needs just

under Title II, which covers secondary treatment, advanced treatment, combined sewer overflows and all of that, and an additional almost \$10 billion when you add in nonpoint source, ground water and some of the other issues that we believe need to be addressed. So there is a very significant need out there. I think for the Federal Government to provide some assistance in meeting that is absolutely essential and appropriate.

Senator GRAHAM. In your statement, you mention that in 1984, it was assumed that \$2.5 billion a year for 10 years would meet the Federal role at least insofar as the most urgent water pollution problems. Three years later, that program was shifted from a grant program to the current Revolving Loan Fund. Almost 10 years after that 1987 assessment, you indicate the outstanding need is \$108 billion and could be more than that.

Were our estimates in 1984 that far off the mark or have our standards changes, have the conditions deteriorated? Why nine years later instead of having come close to meeting what we thought were the most urgent needs are we over \$100 billion behind?

Ms. BROWNER. Well, our analysis a decade ago focused on the traditional municipal wastewater needs. It was a more narrow picture, if you will, of the problems out there. In the last decade, we have come to understand that in fact we need to focus on a larger set of problems, including such things as combined sewer overflow, abatement, stormwater management and nonpoint source control. Those sorts of issues were not included in the needs assessment of a decade ago. That, I think, represents some of the differences you see in the numbers.

I think we all now recognize that, if we are going to seriously deal with the remaining water quality issues facing this country, it will have to be not just municipal wastewater but it will also be combined sewer overflows and nonpoint source.

Senator GRAHAM. Thank you, Ms. Browner.

My time has expired. Senator Chafee, who is the ranking member of the subcommittee and the full committee and one of the most committed members of the Congress for effective protection of our Nation's waters has joined us, but in his graciousness, has deferred to our colleague, Senator Lieberman, to ask the next round of questions.

Senator Lieberman?

Senator LIEBERMAN. I would defer back to Senator Chafee if I didn't think that he was deferring so he wouldn't have to go back to the Finance Committee.

Senator CHAFEE. Would that I was invited to the Finance Committee meeting.

Senator LIEBERMAN. Oh, I'm sorry.

[Laughter.]

Senator GRAHAM. We purposely scheduled this meeting at this time, Senator, to give you something to do.

[Laughter.]

Senator CHAFEE. Thank you. There were only 11 invitees to the Finance Committee meeting recently, regrettably.

Why don't you go ahead Senator Lieberman?

Senator LIEBERMAN. I'd be glad to.

I wanted to start, Ms. Browner, with some discussion about watershed base planning which you emphasized in your talk. I think we are all concerned with the theory that watersheds are the best way to look at water quality and planning but we have this reality which you referred to which is that political jurisdictions generally don't follow the boundaries of watersheds.

I wonder what thoughts you have about how we can assure that watershed plans will be implemented by political jurisdictions which do not follow those watershed boundaries. Do we need, for instance, to create new overarching jurisdictions for this particular purpose?

Ms. BROWNER. I don't think that you absolutely have to do that. Some States have chosen to do that. The Chairman in my home State of Florida in fact has set up water management districts based on watersheds in an effort to manage activities in that way. I think that you can achieve the goal of watershed protection without those sort of jurisdictions, but some States have found them helpful.

I think as we look at the Act and the reauthorization, it is very important that we look at what are the incentives we can place in the Act to encourage States to act that way and that we remove barriers. I think that, particularly because of the framework of the Act as it has existed since its original passage in 1972, it is important that we continue the structure of incentives and partnerships and not look to some heavy hammers in terms of "you have to do this or you won't get that", but rather if you can develop a watershed protection plan, then perhaps you move up higher on a particular list for funds.

Senator LIEBERMAN. The nonpoint source pollution control programs which currently require the States to produce at least a statewide plan and the National Estuary Program are probably the closest things we've got to real watershed based planning. I wonder if you would more specifically at this point or later recommend changes in those programs that would improve the States' ability to draft and implement watershed plans?

Ms. BROWNER. Changes in the Clean Water Act?

Senator LIEBERMAN. Yes.

Ms. BROWNER. Yes, we would be more than happy to provide some specific recommendations. I think that the bill introduced yesterday by Chairman Baucus and Senator Chafee does include some provisions that we think are important and move us in the right direction. We are completing our analysis of that and we would be more than happy to provide our analysis when it is completed. (See testimony of Steven A. Herman, Assistant Administrator for Enforcement, July 27, 1993, p. 813.)

Senator LIEBERMAN. Let me ask you something based on a specific experience we've had with Long Island Sound. The Long Island Sound Studies Management Conference is now drafting or redrafting its comprehensive conservation and management plan as required by the National Estuary Program. I think a lot of us who looked over the first draft, into which a lot of effort and money was put, were troubled that it may be easier to imagine these watershed-based planning documents than it is to actually produce them effectively and that in that sense, there may well be a shortage, at

least at the local level, of the expertise to turn out programs that work.

I wanted to ask you, based on that experience, if you would consider ways in which EPA nationally might provide technical assistance to local groups such as this one to upgrade the quality of these watershed-based programs that are hopefully going to be implemented?

Ms. BROWNER. I think your point is very valid. While we do make some funds available in terms of technical assistance grants, there is probably a need to do more. Some communities, you are right, have had better access to the technical input in terms of developing their plans than other communities and that is something we should address, I would agree.

Senator LIEBERMAN. Let me ask you a final question about the State revolving funds which are very much in our minds as the questions have indicated.

A while ago, Senators Moynihan, D'Amato, Dodd and I introduced legislation that would strengthen the National Estuary Program to ensure watershed-based planning and would set aside an increasing percentage of monies each year for coastal States in the argument that is where the most significant need is, that's where the population is moving, set aside an increasing percentage for those coastal States which complied with the stricter requirements of the National Estuary program. In a way, this is an attempt not only to create an incentive system, but to try to create an allocations system understanding that we don't have enough money to meet the need to try to target it to the areas of greatest need and also greatest local effort.

I wondered if you had any reaction to that idea or any other thoughts about allocation formulas for the SRF?

Ms. BROWNER. I think that the issues facing our coastal cities are obviously large ones and I think you are quite right in calling to everybody's attention that, when you look at where the population is growing in this country, when you look at the impacts to those water bodies, it is significant.

In terms of how we should structure, perhaps, a recognition of that in the law, I think it is important to recognize that the SRF formula does recognize need and that should be continued. We would agree that the recognition of need should be a part of any formula discussion.

We are in the process of looking at the legislation that you have introduced and will be talking to your staff about it in the not too distant future.

Senator LIEBERMAN. Good. I'll look forward to working with you on that.

Thank you, Mr. Chairman.

Senator GRAHAM. Senator Chafee?

OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. Thank you, Mr. Chairman. Thank you for your kind comments about my interest in these areas earlier and I appreciate that.

I also want to say that you have been a tremendous mover in connection with Clean Water and other activities and we are delighted that you are heading the subcommittee.

I have a statement that I will submit for the record.

Ms. Browner, when are we going to get an Administrator for Water? As I figure it, it is June 17th, isn't it?

Ms. BROWNER. Yes, you are right.

Senator CHAFEE. June 16th.

Ms. BROWNER. We will do it by June 17th. No, Senator, we are, I think, very close.

Senator CHAFEE. That's a big term. That allows you a lot of leeway.

I hope you get going because I think that it is very important for us to have some guidance in what the administration truly wants. You've got a big office you're trying to handle and obviously you can't handle all of these things, so I hope you get on with the selection of your people. I don't know whether the tie-up is at the White House or where it is, but I hope you can move rather quickly.

You acknowledge in your testimony that one of the major problems is nonpoint source pollution. In the past, when it came to seriously dealing with that, we tiptoed around it because of the danger of land use planning. That was something that got the hackles up of all the locals, the Governors and the mayors, and the Congressmen and Senators would get very excited if we indicated we were going to do anything that involved land use planning.

In this legislation, it does require the farmers, in impaired watersheds, to adopt the best management practices. As I understand, EPA has put out a volume on best management practices. Somebody told me that it is the size of a phonebook. They didn't say which phonebook, but that is a threatening term. Is that so?

Ms. BROWNER. As I understand, perhaps the document you are referring to doesn't just speak to farming activities, but to a variety of activities.

Senator CHAFEE. But best management practices?

Ms. BROWNER. That is correct.

Senator CHAFEE. How are we going to get a farmer to cooperate? If he's a dairy farmer in Maryland not so far from the Susquehanna River and he's got enough problems without worrying about best management practices as EPA defines it. Why should he participate? Why should he keep his cattle from breaking down the banks of the river of the little stream that runs through his property? Why should he worry about the fertilizer runoff on his corn fields?

Ms. BROWNER. Senator, I think there is a tremendous resource in the U.S. Department of Agriculture and the Soil Conservation Service in terms of reaching out and working with these farmers, working with them in a way that they can understand and relate to.

Senator CHAFEE. You've got some of the largest dairy farms in the United States I guess in Florida. What did they think when you came around telling them how to behave?

Ms. BROWNER. Before my tenure in Florida, and the Chairman will remember this because as Governor, he certainly participated in it, the State had undertaken a comprehensive analysis of the

dairy farmers in the Lake Okechobee area because of the effects of the runoff from those dairy farms on the water bodies. It has been a program that has had its ups and downs, I'll be very honest with you.

I have met with the farmers. I did meet with the dairy farmers down there and it was a real hands-on thing. The way it worked was people were out in the field on almost a monthly basis early on and that's what it is going to take. It's going to take using people out in the field who understand farming practices, who understand what are the changes that can work for farmers and, quite frankly, what are the changes that will not work for farmers.

Senator CHAFEE. I'm all for this but the practicalities of it, the farmer isn't affected by the pollution that shows up in Chesapeake Bay, he's upstream. So how do you get him to put a fence along the banks of the stream and just have one place and maybe have a concrete apron of some type, all of which costs money? In Florida, in comparative situations, how did you get the farmer to invest that money when there is no return for him? What does he care if the banks of his stream are broken down?

Ms. BROWNER. In some instances, there is a return. Best management practices can sometimes be very cost effective in terms of how a farmer is using fertilizers or is managing the water. There are, in fact, monies to be saved as you implement these best management practices.

In Florida, we also have funds available to assist the dairy farmers. There was State money available. I think there is also the issue of farmers recognizing the importance of their soil and of protecting the soil, and that frequently these best management practices will also help to protect their soil and the quality of the soil.

Senator, I don't want to suggest in any way that we don't think this is difficult. It is difficult.

Senator CHAFEE. But you had some success?

Ms. BROWNER. We have had success, yes. There are other States that have had successes.

Senator CHAFEE. My time is just about out.

[Senator Chafee's opening statement follows:]

OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM
THE STATE OF RHODE ISLAND

Mr. Chairman, I want to join with you in welcoming Administrator Browner and the other witnesses to our hearing this morning.

We're off to a good start on reauthorization of the Clean Water Act. As you indicated, I joined with Senator Baucus on a reauthorization bill that was introduced yesterday. We very much appreciate your willingness to use that bill as the text for these hearings and are grateful for the time you have set aside for this task in the coming weeks.

Perhaps the most important principle that guided our drafting efforts was the desire for a bill that is workable. The Clean Water Act has been a big success in my view. We need to keep it on course. When we work on reauthorization bills in this Committee, there is always a temptation to address every environmental problem . . . to pile on one mandate after another.

But we have to be realistic about the resources that are available to EPA, to the states and cities, and to the regulated community. Our responsibility is to identify the most important priorities that can be accomplished with the resources we have and to muster the political will to follow through on the requirements that we enact.

I have heard Administrator Browner say on more than one occasion that the work of EPA is driven too much by litigation . . . citizen suits seeking court orders to carry out non-discretionary duties. She wants to carry out the law. But she has said that in the past EPA has not been frank with Congress on what can be accomplished and what must wait for another day.

Today is her chance to be frank with us. We have already cut back on the mandates in this bill. This bill is less demanding than Clean Water proposals circulated in the last Congress. But there may still be items in the bill that give EPA concern . . . things that can't be done . . . or things that shouldn't be mandated because they are of a low priority. The success of this bill, both in the legislative process and as it is implemented in the future, depends to a considerable degree on the quality of the advice we get from EPA now. Be tough. Be specific. Be frank. That's what we need.

Thank you.

Senator GRAHAM. We've been joined by Senator Metzenbaum who has an opening statement.

Senator?

OPENING STATEMENT OF HON. HOWARD M. METZENBAUM, U.S. SENATOR FROM THE OF OHIO

Senator METZENBAUM. I'm not a member of this subcommittee, but I wanted to attend today's hearing to begin the very important process of reauthorizing the Clean Water Act. Few issues could be more important or more necessary than cleaning up and protecting the Nation's precious waters.

I have to doff my hat to Senators Baucus and Chafee for introducing legislation to reauthorize the Clean Water Act. With the introduction of their bill yesterday, they put us on the right path toward enhancing and protecting water quality in this country.

There is no doubt about it, tremendous progress has been made in cleaning up our rivers, our lakes, our streams and our ocean coasts, but much more remains to be done. Untreated sewage, industrial discharges of toxic pollutants, pollution from urban and agricultural runoff still threaten our waterways. The Clean Water Act legislation addresses these water pollution problems on a national basis.

Very shortly, I plan to introduce legislation which will focus on the special pollution problems of the Great Lakes, which I might point out represents 95 percent of the Nation's freshwater surface water. My legislation will expand upon the proposal which I offered last year to the water resources bill and which I've reintroduced this year dealing with sediment management and control. I can't think of a more critical issue as far as the Great Lakes are concerned.

Right now, thousands of acres of underwater sediment are contaminated by toxic pollutants dumped by factories, sewage treatment plants, hazardous waste sites and other sources. In fact, these sediments are the main reasons for fishing restrictions in the lakes. Improper dredging and disposal of these contaminated sediments in the lakes cause us further harm.

My legislative proposal will require the Corps of Engineers to pay more attention to environmental concerns when deciding where to dispose of dredge spoils in the lakes and give EPA bigger role in this disposal process. The bill will also facilitate the cleanup and removal of contaminated sediments and help develop ways to reduce sedimentation of the lakes.

The bill will move beyond the sediments problem and investigate such issues as pollution prevention and lakewide management plans and Federal research activities on the lakes. These are not simple issues, but they are very important ones.

I look forward to working with the members of the Great Lakes community, members of the subcommittee and the full committee on my legislative issues as well as on the broader clean water reauthorization legislation.

I know the subcommittee will spend the summer holding a series of hearings on clean water-related issues. I look forward to them, but the truth is, I also look forward to the day when we in Congress craft the final measure that will protect and enhance the quality of our Nation's water.

I commend you, Mr. Chairman, for chairing this hearing and I commend Senators Baucus and Chafee for their leadership in this area. I think together we can do a job that is very worthwhile.

Senator GRAHAM. Thank you, Senator.

We'll have one more round of questions for Ms. Browner before we move to the second panel.

Ms. Browner, in your opening statement, you alluded to the importance of data collection. I share that feeling. If we are going to try to take a performance-based approach, which watershed management entails, it is imperative that there be a capability of monitoring that performance.

Could you give us your comments as to where you think we are today in terms of having adequate data collection systems in order to support the decisions that will have to be made under an increasingly performance-based management system?

Ms. BROWNER. Mr. Chairman, we recognize that we need to do a better job. This is quite frankly an issue not just in terms of our water program but an issue across the agency. We collect an awful lot of information, we're required to collect a lot of information within the agency. Frequently, when those original requirements are established, the information is collected for one sort of specific reason; over time, we recognize that there are many other uses that can be made of that information.

We are seeking across the agency to make sure that we have an integration of our data management systems so that we can undertake the analysis that we believe is appropriate for the Federal environmental agency in this country to be doing in order to provide the policymakers, the Congress, with this sort of information.

The process that had begun in the agency had been estimated at full funding to take about 3 years. We are still dealing with some funding issues but we are moving forward within existing resources to do what we can. I think we will also need to look at how we require information, what is the information that we require, and to perhaps broaden some definitions so that we get a wider variety of information so that we can provide that analysis to the public and to the Congress.

Senator GRAHAM. I am pleased that you are focusing on the necessity to have in hand, to the best of our ability, what are the questions you want to have answered before you proceed to collect data. It has been my experience in a whole range of areas from education to the environment that the typical problem is not that

you don't have enough information, it's just irrelevant to the question that you want to ask. So I strongly encourage you to continue your commitment to shaping what are the management issues that decisionmakers at the Federal level, as well as States and communities, will need better data with which to make improved judgments and then develop the data systems that will facilitate supporting those management structures.

You discussed in your statement, Ms. Browner, the strategy of pollution prevention. This has been a major focus in other areas of national environmental concern, particularly in the Clean Air Act. What are some initiatives that you think we could help enhance through the reauthorization of the Clean Water Act that would facilitate the reduction of pollution?

Ms. BROWNER. I think again we need to make sure that we, first of all, put in place every incentive we can to encourage people to move in the direction of pollution prevention and to avoid unintentional disincentives. As we look at the very pressing problem of polluted runoff, pollution prevention will offer us some real opportunities in terms of creative ways of addressing the nonpoint pollution—the agricultural, urban and other runoff—and actually preventing the pollution from occurring in the first place.

I think that the effluent guidelines will also provide us with an opportunity to incorporate pollution prevention goals and pollution prevention techniques, if you will, into the work that we do under the Act.

One of the other things we could do, and there has not been as much of this in the Clean Water Act, is require facilities to actually incorporate pollution prevention into their planning. There is some of that in some of our other statutes, but it's not really in the Clean Water Act. Perhaps we should look at how we could strengthen it to say to facilities, you have to actually think about this, you have to develop plans for pollution prevention.

I want to be clear, it may be in the draft that has been put forward and if it is, we applaud the work on that.

Senator GRAHAM. We're celebrating the first anniversary of the 1992 Rio Conference. One of the areas of emphasis there was prevention pollution. It was stated that the Europeans had developed both a philosophy and some technologies that had reduced the amount of their pollutant discharges, both air and water.

Are there some lessons that we might learn from what other industrialized societies have already implemented that would contribute to our ability to prevent water pollution?

Ms. BROWNER. There do appear to be some lessons that we can learn, particularly from some of the European countries who have moved out in terms of some pollution prevention activities. We do seek to work with other countries in terms of understanding technologies and sharing those sorts of things.

It may be appropriate for us to look at some of these activities and see if they can be incorporated into some of our guidelines to industries and municipalities so that they could also seek to implement them here.

Senator GRAHAM. Thank you, Ms. Browner.

Senator Chafee?

Senator CHAFEE. Thank you, Mr. Chairman.

The Baucus-Chafee bill we've introduced requires EPA to publish a list of pollutants that are highly toxic and that bioaccumulate in the food chain. After you list these pollutants, you mean to ban their discharge from all sources.

Let's take mercury. Thirty percent of the mercury in our waters comes from the burning of coal. How are you going to tackle that one? We say in the bill it is bioaccumulated and highly toxic.

Ms. BROWNER. Senator, in looking at the bill, we feel, as I said in my opening statement, it is a very good bill and a very strong bill. We would like to continue to work on the toxics section with the Committee and the Subcommittee staff. I made reference to it in my opening statement, we certainly recognize the continuing need to address toxics in our waterways in terms of how we can do that as an agency within our resources. That is a question for us and we would like to continue those discussions with the committee.

Senator CHAFEE. When you testified before us at your confirmation, you said you wanted to get away from this business of everybody suing EPA, but one of the problems we find, and your predecessor talked about this, was the shortage of personnel. He told us, and I can only assume that it's accurate, that there's been no growth in the number of people in EPA in the Water Program during the whole Bush Administration.

So if we're going to start out with a whole new series of programs and if we take the pollution or nonpoint source situations we were just discussing, how are we going to support these? Are we going to resort to fees or how are we going to do it? I think one of the things you can do for us is to tell us the requirements you are not going to be able to meet.

It seems to me also there's a series of deadlines that are mandated deadlines in the bill. If you can tell us where you think you can't meet those because of lack of resources or lack of innovation, that would be very helpful. I would assume you could send that list up to us?

Ms. BROWNER. Absolutely, Senator. We are in the process right now of costing out the resources we would have to bring to bear and looking at the very specific issue of the deadlines. We will give you our best analysis as soon as that is available.

Senator CHAFEE. There may be some fees that we can charge.

Ms. BROWNER. I think that the States very much appreciate the idea of sort of a backup, if you will, in terms of some of the permit fees. NPDES may be a good example where the States would probably like to see some Federal pressure put on them to put in place a fee structure so that they have adequate resources to actually manage the program. I think a lot of States actually like the fact that there is a Federal framework for establishing fees; it has given them something to work within in their State legislatures. That is probably something that is appropriate to look at in terms of some of the permitting activities, particularly with respect to the States under the Clean Water Act.

Senator CHAFEE. Thank you, Mr. Chairman.

Senator GRAHAM. Thank you, Senator.

Senator Lieberman?

Senator LIEBERMAN. Just a few questions related to biological and physical integrity of the Nation's waters.

As you know, the panel of scientists we're going to hear from in the next panel issued a report that suggests that we've neglected to address the biological and physical integrity of the Nation's water with the same zeal that we've addressed chemical integrity. Would you agree with that?

Ms. BROWNER. I think that we have a much greater understanding today than we did 20 years ago of the need to protect the biological integrity of our water. Our focus in the passage of the Clean Water Act was on the chemical integrity, on the sewage and things like that. What we understand now is that we've got to address all of these components if we are going to have healthy, viable, usable water resources in this country.

Senator LIEBERMAN. I was happy to learn recently that you've been meeting with the heads of other departments and agencies that are responsible for stewardship of our natural resources. I wondered whether there's been any discussion about how to involve some of those departments like Interior or Energy and NOAA, and perhaps even the Corps of Engineers more directly in ecological restoration activities that would have the effect of restoring some of the biological integrity of our Nation's waters?

Ms. BROWNER. Senator, you're exactly right. At a variety of levels, there are discussions that have been going on with the heads of the departments and agencies, the deputies and on down to the various staff levels. We have had some very good conversations with Interior and NOAA specifically in terms of thinking about how we can address some of the biological concerns.

In fact, one of the things we are working on right now across the three agencies is the whole question of information collection, analysis, and mapping. The biological mapping and ecological mapping program has been ongoing for some time we are trying to determine, what each of us can do and how we can bring that together.

There is an Interagency Working Group that is focusing on these issues across all the agencies that is incredibly enthusiastic and has really been a forum for raising these things and seeing what we can do both in terms of our existing activities and in terms of the reauthorization.

Senator LIEBERMAN. That's good news, good to hear.

Last Sunday's New York Times ran a story about the devastation of the Chesapeake Bay oyster industry. There was a series of facts quoted there. I've heard them before but they startle me every time I hear them about the functional value of the Chesapeake oyster.

Apparently, 100 years ago, the oysters filtered the volume of water equal to that of the entire 18 trillion gallon Bay once a week. Today, it takes the remaining oysters a year to perform that same function.

My question is, as we look for assistance from all quarters in cleaning up our Nation's waters, should we be doing something more to protect the living organisms which naturally improve water quality?

Ms. BROWNER. I absolutely think so. I'm sure the scientists can address this much better than I but there are lots of natural organisms that when in proper balance, do act almost as a kidney for nature. When they are in healthy water bodies, they can perform

and provide this function and when they are in unhealthy water bodies, they can't. You even have areas like the San Francisco Bay, which I guess 100 years ago had a very healthy oyster population but where today I don't think you can even eat the oysters and crabs there. The oyster population out there has been experiencing some problems. It is an indication that the system is starting to fail. We need to take those indications seriously. Those little critters can do an awful lot of good.

Senator LIEBERMAN. Is there something we should be doing for those little critters or as we clean up the water, do we naturally help them and then they help us in return?

Ms. BROWNER. As with all water issues, when it comes to assistance it is a combination of water quantity and quality. We have to, in our nonpoint source discussions, in our watershed protection discussions, recognize that both of those components must come together in a way to provide ecological balance that is so necessary to protect those sorts of animals and those sorts of systems.

Senator LIEBERMAN. Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much, Senator.

Ms. Browner, thank you for your extremely helpful testimony today. We will look forward to hearing from you on a regular basis as we proceed through this process.

Ms. BROWNER. Thank you, Mr. Chairman.

Senator GRAHAM. Will members of the second panel please come forward?

I'd like to welcome the members of the second panel to our hearing this morning. I will briefly introduce the members of the panel and ask if they will proceed in the order in which they are introduced.

Dr. Bill Cooper is with the Institute for Environmental Toxicology at the Michigan State University. He heads the panel of scientists asked by EPA in 1991 to review the Clean Water Act and make recommendations. I might say, Dr. Cooper, that we have had an opportunity to review your report and find it an excellent contribution to our deliberations.

We also have Dr. Robert J. Huggett, Professor of Marine Sciences at the College of William & Mary. He is a member of the panel of scientists.

The third member of the panel is Mr. Robert Conway, an environmental engineer for Union Carbide Corporation.

The final member of the panel is Dr. James Karr, Director of the Institute for Environmental Studies at the University of Washington.

I would like to make this discussion today as informal as possible. Some logistical problems for the round table discussion I had envisioned make that not feasible, but I would like to maintain a level of informality and particularly encourage the panelists to engage each other. I have found a greater degree of wisdom is shared when you have people who actually know something about the topic engaging each other as well as those of us who are members of this committee asking questions. I would encourage that degree of free-flowing discussion after we have received your initial statements.

Dr. Cooper?

STATEMENT OF WILLIAM COOPER, INSTITUTE FOR
ENVIRONMENTAL TOXICOLOGY, MICHIGAN STATE UNIVERSITY

Mr. COOPER. Thank you, Senator.

In the spirit of keeping it short and in the spirit of looking at a big issue, let me just kind of hit some of the highlights of the observations the scientific group put in the report. Some of them were obviously touched on by you folks today and maybe we can embellish upon them.

In terms of the goals, what are you trying to do, the whole concept of intergenerational equity, making decisions today about economic growth, land use decisions, so that your grandkids also have some choices. The same thing we put in the report for Bill Reilly, that it's not a matter of jobs versus environmental quality. If you don't invest in a higher quality environment, you can't maintain a sustainable economy or a sustainable level of public health. So we don't perceive these things as competitive, they are complimentary.

In terms of the kind of historical aspects of the approach to clean water, I think all of us agree that we've made a tremendous amount of progress in the last 20 years. The original Clean Water Act was mostly command and control, end of the pipe, come up with technology, slap on a number and regulate it. We did end of the pipe control because it was efficient, it was cheap and you could enforce it.

I guess after 20 years, you look at it and ask, was it enough? You look at your environment in terms of its quality, in terms of its biodiversity, in terms of its assets, in some places, it's not, in many places, it's not quite enough, so then you get into areas like non-point source and the other kinds of more difficult implementation phases in terms of regulating discharge.

I think one of the big issues is multimedia. Historically, in the 1970's, most of our environmental legislation was media specific, Clean Air Act, Clean Water Act, TSCA, FIFRA and that kind of stuff. Basically, what we see today is most of the toxicants that bother us in terms of ecologists are moving between media. A good portion of the toxicants in the Great Lakes, where I'm from, are not coming from point sources and they are not coming from groundwater, they are coming from atmospheric discharge. Eighty-five percent of the mercury that's coming into the Great Lakes is coming from the atmosphere. That's true of PCBs, dioxins and DDT.

The Clean Air Act actually, for the first time, does have some multimedia responsibilities. I think it's very important that the Clean Water Act match that in terms of its recognition to what the transport and fate of chemicals are in the environment.

When we talk about persistent toxicants, I think you've got to be real careful. The problem was we talked about compounds, nondegradation, zero discharge, banning products that are persistent. That was all right when you could measure things in milligrams. As my chemist friend will tell you, zero no longer exists and I'm very concerned when you go out and make promises you can't match.

When it comes to mercury, for instance, we just finished our mercury budget in Michigan; 50 percent of it is anthropogenic and

50 percent of it is natural mercury cycling out there where you can't stop. The 50 percent of it that is anthropogenic, half of it is coal and half of it is incinerators.

Senator CHAFEE. What is that word?

Mr. COOPER. Anthropogenic means it is human-based, you guys generate it.

The point is mercury is a very volatile compound, it cycles on its own. So you've got to be careful you don't promise somebody that you're going to ban mercury from aquatic food chains because you can't do it. You could ban the human component maybe but in Michigan right now, if we did those calculations, that would only reduce the mercury by 10 percent and 90 percent of it is coming from out of State.

You've got to get some reality in terms of what you can physically do. You might have it as a goal but I think you've got to recognize the fact that there are limits to what you can crank down. Most of the persistent compounds can be regulated just by banning them, just outright stop producing them. That's all right for PCBs, that's all right for persistent pesticides. When it comes to things like dioxins that are formed by bleaching and by fire, or mercury which is natural, you've got to be real careful that you recognize the fact that you can minimize the amounts fluctuating out there but real careful you don't promise people you can ban them.

When it comes to, for instance, nonpoint source, it's obvious now that we've cleaned up a lot of the big point sources, we look out there and the nonpoint source is the biggest single mass loading that is left. They come in many forms. Most of the approaches in the States have been for voluntary, best management practices—agricultural, forestry, highways, whatever it is going to be.

I don't think the problem is planning for that. Most States have a pretty good idea in their own ecosystems as to how you can approach nonpoint source. I think the problem is implementation. How do you get the clout in a voluntary program? You do it saying if you're in agriculture, you can't get accessibility to subsidies, you're not eligible for Federal subsidies. If it's in forestry, maybe you couldn't be eligible to cut timber on State and Federal forests if you don't cooperate. The mafia a long time ago learned that bribes worked better than penalties. The idea is coming up with some ingenious way to make it in their best interest to cooperate if it's going to be a volunteer program. It's that kind of level of debate we're having right now in terms of nonpoint source.

Senator CHAFEE. That's an unhappy analogy, I think.

[Laughter.]

Mr. COOPER. Well, the Senator asked us to be blunt.

Basically, when it comes to watershed management, one of the recommendations in the report is that you rename the Clean Water Act to the Watershed Management Act because that's what we are doing. You can't manage the chemicals once they are in the water. It's like pollution prevention; watershed management is an analog to pollution prevention. It's far more cost effective to do in the watershed than it is once it hits the sediments of the Great Lakes. That involves again a great degree of different ways of thinking.

You can take a watershed and for instance, put a total mass load as your end point, and a certain total amount of material that can be processed with some kind of sustainability. How do you allocate the access to that processing capability, that free good? You could do it essentially with best management practices and agriculture, you could do it with the European approach that you talked about, the life cycle analysis, go to the best production process and do best production processes and allocate the various access on a watershed basis—quite different from what we are doing today which is mostly concentration-based discharges.

That gives the watershed some choice and flexibility as to what mix of industry are they welcome to accept based on how they can trade off, those kind of internal versus external kinds of controls.

When we talk about environmental data collection, there's no question there's all kinds of data being collected on the environment nowadays. Most of the States rely on the Federal Government to come up with the databases.

One of the things that happens when you cut out the data acquisition systems and we lose our monitoring programs, most of the enforcement is at the State level but most of the monitoring is at the Federal level. Again, you monitor for three different reasons. You can monitor for regulations, which means compliance to your discharge permits and usually that's chemicals. You can monitor in terms of long-term trends. The Administrators of EPA for years have stood up and said to Congress, I think EPA is doing a good job but I can't prove it to anybody. There are no long-term databases to show are you over regulating, under regulating or right on target.

For that kind of trend analysis, you need biological indicators as well. If your purpose is to protect the integrity of the ecosystems, you can't just look at the water chemistry, you've got to look at the biocriteria, the various kinds of populations and community parameters that indicate you are in fact protecting the biological resource. It's a different set of data in many cases.

The other thing you regulate or get numbers for is damage assessment when you want to go to court and sue somebody for damages. In most cases, that is specifically biological kinds of data but usually things that have economic interests. The dollar value of an oyster, you don't worry about a marine algae usually. So there is different kinds of data depending on what datasets you want to collect.

In terms of the habitat and biodiversity, the components in our report that are nonchemical, if you ask ecologists what are the biggest threats to the integrity of our aquatic fauna and flora in this country, it's not chemicals, it's habitat destruction and the introduction of exotic species. That's not human health, that's ecological risks.

Part of the reason they want it emphasized is because some of the original goals were looking at human health and weren't looking at ecology. There was a very different set of factors you look at in terms of integrity of aquatic ecosystems.

I guess the last thing I'd say, then I'll be quiet, is the whole concept of quantity and quality. If you look at habitat destruction, a lot of it is not necessarily the quality of the water, it's the quantity

of the water and the way it's treated in terms of riparian vegetation where the cattle tromp down the banks, where you have peak flows downstream from hydroelectric plants, where you're fluctuating the water levels, a lot of damage is done by quantities and fluctuating levels of quantities as much as necessarily quality.

With that, I'll stop.

Senator CHAFEE. Mr. Chairman, regrettably there is a vote and unfortunately I have to go over for the early part of this vote. I don't know what your plans are.

Mr. Cooper, we had a history professor like you who spoke so fast they said if you dropped a pencil, you missed two centuries.

[Laughter.]

Senator GRAHAM. He must have started very early in history in order to fill up a full semester, if he moved at that speed.

[Laughter.]

Senator GRAHAM. Since this vote has just started, Senator Chafee if you would like to ask any questions of Dr. Cooper, we would take those questions. Then we will take a pause to vote and return and pick up with Dr. Huggett as the next presenter. I apologize for this interruption.

Senator CHAFEE. I definitely will come back. I don't have any questions. I think it was very interesting. What he said is, as we were mentioning before, a lot of this pollution is atmospheric, it's not from point discharges. We've got some big decisions to make if we're going to ban burning of coal, for example.

Senator GRAHAM. We will recess until we return from this vote.

[Recess.]

Senator GRAHAM. The meeting will reconvene.

Dr. Robert Huggett?

STATEMENT OF ROBERT HUGGETT, COLLEGE OF WILLIAM AND MARY, VIRGINIA INSTITUTE OF MARINE SCIENCES

Mr. HUGGETT. Thank you, Senator.

Mr. Chairman, I was a member of the panel in Michigan that wrote the report you have. I have also recently been involved with the Water, Science and Technology Board of the National Research Council.

We have been studying ways to more efficiently manage waste water in our coastal environment. All of that effort has just been published and I believe your staff has a copy. It is entitled, "Managing Waste Water in Coast Urban Areas." I would like to take this opportunity to present a few of the findings of that study because I think they are pertinent to the reauthorization of the Clean Water Act.

Finally, I would like to pick up on some of the things said by my colleague, Bill Cooper, as well as some members of your committee.

More than a third of all Americans live along the coast in urban areas. Every day we have 1400 wastewater treatment plants discharging approximately 10 billion gallons of treated effluent. The annual treatment cost alone is somewhere between \$1.1 and \$1.8 billion. We have another \$11.3 billion gallons of treated industrial wastewater and spent cooling water generated by approximately 1300 additional facilities.

In addition, nonpoint sources, which have been mentioned a number of times here, including urban and agricultural runoff, atmospheric input and groundwater input are growing problems. Pollution can come from outside of the region and come not only, as Bill said, from a watershed but can come from other States and now we find even other countries.

We recently analyzed a coelecanth collected off the coast of Madagascar in approximately 2,000 feet of water that had a very high concentration of polychlorinated biphenyls. Obviously, the pollutants didn't come from there.

There are other human activities that can affect the coastal marine systems. For example, increased irrigation by farmers can reduce the amount of fresh water flowing into our estuaries and overfishing can alter the ecological balance in marine waters.

It was mentioned earlier that the oysters in the Chesapeake Bay have diminished to the point that the volume of the Chesapeake Bay is filtered now on the order of once a year where before at the turn of the century and probably up through the 1950's, on the order of once a week. Not many people realize the devastating effect the loss of the oysters had, not just to the Chesapeake Bay but all up and down the East Coast of the United States. My personal opinion is that it has probably been the most devastating event or happening in the coastal waters of the United States in the history of this country.

A single oyster can filter approximately 100 gallons of water a day, filtering out particles between 2 and 18 microns with up to a 90 percent efficiency. If you can imagine these animals filtering the largest estuary in the United States, the Chesapeake Bay, on the order of once a week. When you disrupt or change the flow of particles in an estuarian system or freshwater system, for that matter, you change or alter the flow of all the chemicals in that system. Many of the toxic or hazardous chemicals are associated with particles. When they are not filtered out of the water column and placed into the bottom of the system by its fecal material, the system changes.

The increased turbidity of the water column, since it's not being filtered, can block sunlight so it doesn't penetrate as deeply into the water column thereby affecting the submerged aquatic vegetation.

I would submit that perhaps one of the best ways we could spend some of our money may not be in upgrading sewage treatment plants, but putting the oyster back in the water to filter as it once did.

Our current wastewater and stormwater management policies are rooted, as mentioned, in the 1972 amendments to the Federal Water Pollution Control Act, reauthorized in 1977 and 1987 as the Clean Water Act. The 1972 legislation asserted authority over the quality of navigable waters such as rivers, lakes and coastal waters, required establishment of uniform minimum standards for municipal and industrial wastewater treatment, set strict deadlines for compliance, and provided Federal funds to help pay for newly acquired projects.

Under the statute, efforts to protect coastal water quality have focused mainly on regulating city sewer systems and other single

point sources of pollution such as industrial plants. This approach has been effective, there is no doubt about that. There is no question the Clean Water Act has produced great benefits for this country.

However, the law's uniform requirements have not allowed a process that adequately addresses regional variations in environmental systems around the country or that responds to changing needs or improved science and technology. To more efficiently protect coastal waters from pollution, the Nation must begin moving on a more flexible, Integrated Management Approach that takes into account the full range of factors that affect coastal pollution and the efforts to control it.

This recently released report calls upon the use of Integrated Coastal Management. It says that "ICM, Integrated Coastal Management, aims to protect coastal ecosystems while recognizing the importance of human activities such as boating or commercial fishing."

Under the approach, the Federal role in integrated coastal management shifts from proscriptive mandates. For instance, now you must have secondary treatment, there is no other alternative basically. It shifts from that proscriptive-mandated approach to a partnership with regional authorities in developing a management system that meets the coastal quality objectives. The authors of ICM suggest several modifications to the Clean Water Act and the Coastal Zone Management Act, including establishment of the National Coastal Quality Program as a supplement to the National Estuary Program.

The study identifies several key issues that planners and legislators must consider when thinking about wastewater management. Many of these issues are not effectively addressed by the current clean water strategies and point to a need for an integration of function among the agencies, including those that are concerned with stormwater and wastewater and runoff, wastewater agencies themselves and agricultural agencies.

For instance, treatment levels, the cost and complexity of treatment are a major factor that vary greatly from area to area. Regional, environmental and health concerns also vary. Wastewater treatment levels and related management concerns need to be guided by water quality concerns rather than by technology-based regulation. By that, we mean that one should look at all of the sources of material within a given water body, be it a watershed or an ecosystem, and decide how best to regulate them. Perhaps secondary treatment is not the best way. There are some areas that have enough receiving water that secondary treatment is probably not required. There are areas where the receiving waters are very limited and more than secondary treatment is necessary. It needs to be done on a case-by-case basis but the ultimate selection should be based on water quality, sediment quality or biological quality.

Relative to excess nutrient enrichment, we find that nitrogen and phosphorus from both point and nonpoint sources can deplete dissolved oxygen resulting in fish kills, ALGAE blooms and other environmental problems. Secondary treatment of water, however, as prescribed by the existing Clean Water Act, does not remove significant amounts of nitrogen.

It has already been mentioned that source control or pollution prevention is a very, very important factor to consider and I won't expand on that here.

I think that it is important to realize that the way we are now managing our coastal environment is by command and control. We can move beyond that. We have the scientific technical capability to now perform risk assessments and relative risk assessments so that we can decide scientifically and technically where the best place to spend our money might be and how to do it.

I recommend highly that as you work on reauthorization of the Clean Water Act that you allow risk-based management to be an integral part.

Thank you.

Senator GRAHAM. Thank you very much, Doctor.

Mr. Richard Conway?

STATEMENT OF RICHARD CONWAY, SENIOR CORPORATE FELLOW, UNION CARBIDE CORPORATION

Mr. CONWAY. Mr. Chairman, I also was involved in the Michigan forum and the National Academy of Sciences study of urban coastal discharges and the EPA Science Advisory Board's study of reducing risks. I testified before this body on the 1972 Act and I'm pleased to be asked to return.

The Clean Water Act has resulted in major reductions in industrial discharges; receiving water quality has improved and that should continue. For example, since 1987, Union Carbide has reduced its water discharge of known and suspected carcinogens by 90 percent. The BAT standards are just being included in the renewed permits, so improvements are going to continue.

I am in accord with the four consensus studies I cite in my testimony by scientific groups that the existing Clean Water Act will adequately control industrial point source discharges. Ratcheting down point source discharges beyond what is already scheduled would impose severe economic penalties with little benefit.

As Congress looks forward to reauthorizing the Clean Water Act, it should take a risk-based approach to determine the appropriate focus. Specifically, it should include four points: flexibility, physical loss of habitat, peer review, and preservation of combined treatment.

First, flexibility through alternative compliance mechanisms should be provided where overall risk at a site can be reduced by an alternative approach. The examples I've cited in the testimony include a stabilization pond at our Seadrift, Texas plant and a pollution prevention project at our Taft, Louisiana plant. These will reduce total environmental releases but don't quite meet the effluent guidelines in terms of suspended solids. So under the present law, we'd be forced to use higher risk alternatives, i.e. higher total releases. Some flexibility is needed to correct this problem.

Second, the areas of greatest risk should be addressed. I agree with the previous speakers that physical alteration of aquatic habitat is the greatest risk to be addressed.

Third, if additional materials are to be regulated, the proposed requirements should be subject to public comment and peer review.

This was not done in the present Act. It is necessary to have this review by qualified scientists.

Fourth, the combined treatment of domestic and industrial wastewater should not be curtailed as suggested by some, but rather controlled by pretreatment standards both nationally and locally. This approach offers treatability, accessibility and economic advantages.

In conclusion, the Clean Water Act does adequately address industrial effluent quality but not the remaining high risks like physical loss of habitat. The reauthorization should include alternative compliance mechanisms considering total releases, peer review of any material that is to be regulated, and continued reliance on pretreatment standards to control combined treatment of industrial and domestic wastewater.

I thank the committee for allowing me to testify.

Senator GRAHAM. Thank you very much, Mr. Conway.

Dr. James Karr?

STATEMENT OF JAMES KARR, INSTITUTE FOR ENVIRONMENTAL STUDIES, UNIVERSITY OF WASHINGTON

Mr. KARR. Thank you, Mr. Chairman, for inviting me to appear before this committee to comment on the chemical, physical, and biological health of the waters in the United States and whether and to what extent the Clean Water Act has achieved its goals.

Abundant evidence indicates that the quality of water resources is being degraded and the supply of fresh water is being depleted. Degradation continues, I would argue, because we have implemented the Clean Water Act as if crystal clear, distilled water running down concrete conduits was the goal of the Act. Although the mandate was to restore and maintain the physical, chemical, and biological integrity of the Nation's waters, its implementation has concentrated on two issues, effectiveness of wastewater treatment technology to control point sources and human cancer risks. The dominance of these two issues has prevented program managers, political leaders and the public at large from tracking the actual condition of water resources.

In drafting a solution, we must keep in mind the admonition from Albert Einstein that goes something like, "You cannot solve a problem by applying the conceptual framework that created it." To change the conceptual framework, we need to shift the societal focus from water quality to a broader concept, the ecological health of the water resource system.

Another shift involves the use of the word "pollution." Pollution is usually assumed to mean chemical contamination, but human influences on water resources are broader than chemical contamination, as already stated by a number of people today.

Humans may degrade or pollute by withdrawing water for irrigation, by overharvesting fish populations, or by introducing exotic species or chemical contaminants. We need a framework that goes beyond faith in chemical criteria and technological solution, a framework that addresses all of these influences.

Using chemical criteria, USEPA acknowledges that water resources throughout the United States are significantly degraded.

More than one-third of river miles assessed do not fully meet their designated uses, more than half the assessed lakes, but EPA underestimates the magnitude of the problem because their analyses are based on chemical rather than biological criteria.

Under Section 305(b) of the Clean Water Act, States are required to report the status of water resources within their boundaries. When those status reports include biological evaluations, they show that conventional chemical criteria fail to recognize 50 percent of the degradation that actually exists. That conclusion is reinforced when one examines the biotas of fresh waters and near coastal environments. Threatened and endangered species, fish consumption advisories in over 40 States each year and declines in commercial fish harvests that run 80 to 100 percent degradation, disappearance of that resource, during this century indicate that the degraded condition of our resources is far more severe than is reflected in the conventional analyses using chemical criteria.

How would we respond as a society if our agricultural productivity declined by more than 80 percent in any agricultural sector? How can we continue to ignore declines of that magnitude in water resources that are essential to the economic and ecological health of human society? Put simply, our dependence on technology-based standards and chemical criteria has failed to protect the quality of our water resources.

Two important advances in the past decade are key to protection of those resources. First is development of a broader conceptual perspective to protect the health of the entire resource system from a diverse array of human influences not just chemical contamination, and the second is the use of biological evaluations to protect the quality of water resources.

The classic arguments against the use of biological monitoring are of little importance relative to the benefits to resource protection that result from their use. Recent studies show that biological monitoring is cost effective, broadly based ecologically, flexible for special needs, sensitive to a broad range of degradation, and easy to relate to the general public.

Three major issues are critical, in my view, to reauthorization of the Clean Water Act. First, the phrase "water quality" should be replaced by a broader concept such as protection of the ecological health of water resource systems. That really, I submit, was the goal of Senator Muskie in 1972. We have not come close to even addressing that issue, let alone accomplishing it.

Second, ambient biological monitoring should be central to assessing the quality of the Nation's water resources. All environmental legislation is grounded in biology, not chemistry, physics or mathematics. It reflects society's biological goals. The objective of ecological health is a biological objective and thus, biological evaluations are critical to all water resource assessments.

Third, we have to evaluate the actual results of management and protection programs. For decades, we have operated water quality programs as if the relationship between societal action and resource condition were known. In fact, our policies are untested hypotheses that continue to result in resource degradation.

In conclusion, reduction in ecological risk should be a central component of the reauthorization of the Clean Water Act because

healthy, ecological systems are the foundation of a healthy economy and society. Society would not tolerate an approach that defined the medical technology to be used rather than an appropriate health end point. The time is right for using the same wisdom to protect the ecological health of water resources by explicitly defining and protecting ecological end points.

Thank you very much.

Senator GRAHAM. Thank you very much, Dr. Karr and the other members of the panel.

I apologize, we have another vote that is underway. Senator Chafee and I will both return as soon as we've completed our democratic duty.

[Recess.]

Senator GRAHAM. Call the meeting to order.

Senator Chafee will be joining us shortly.

I'd like to start with the same question that I asked Ms. Browner and that is I stated in my opening statement what the purpose was of this Act and what the rationale of the Federal participation was in the Nation's water cleanup in 1972. Many things have changes since 1972.

Several of you have talked about a new, less command and control or proscriptive role for the Federal Government and more one of partnership. I'd like to ask if those of you who would care to do so would elaborate on what you think the rationale and the characteristics for a Federal role in water pollution avoidance or cleanup is in 1993?

Mr. COOPER. I think in terms of the States looking at the partnership with the Federal Government, first of all, since many of these things are, in fact, inter-State roles, you need some uniform minimum standards that you must meet. Individual States could have tougher standards like in the Great Lakes, they are much more concerned about surface water than maybe some other States are; there's tourism—fishing is the second largest industry in the State—so uniformity at least in terms of minimum base lines.

I think the States need flexibility to find solutions to meet those standards regionally and where watersheds are State-based. They need the flexibility to use common sense which is very difficult to put into law. Often common sense is only visible when you're actually living with it and doing it.

I think also you need the Federal Government as kind of a big stick backup. Many of these command and control kinds of solutions are going to require some degree of voluntary participation. We aren't going to go out and license farmers; we're not going to go out and license somebody with a chainsaw. You're going to have to get them to comply with good common sense, best management practices and it might well be that the Federal Government needs to be there as kind of a bad cop to encourage, demand, whatever it takes to get a certain amount of compliance.

Senator GRAHAM. Anybody else?

Mr. HUGGETT. I agree with Dr. Cooper. I do think, however, that the criteria and standards should be broadened not necessarily to end-of-the-pipe or effluent standards or criteria, but rather to receiving water or water body standards or criteria. In other words, assume that the health of the ecosystem would be preserved if the

dissolved oxygen were not below some amount then rather than try to prescribe that every pipe has to have no more than such and such, one might be able to reduce dissolved oxygen-consuming material to some acceptable level by controlling non-point source runoff rather than putting the burden on industry.

Allow the flexibility to determine, on a relative risk basis, which source is presenting the most risks and then spend your money and effort to reduce it.

Senator GRAHAM. Yes, Mr. Conway?

Mr. CONWAY. I have two points. When you look at controlling loss of terrestrial habitat and aquatic habitat, I think it's going to take a multidepartmental kind of effort between the EPA, Interior, and NOAA.

My second point is regarding flexibility in the permit system. I think some new means besides a series of numbers none of which can exceed even minimally needs to be introduced to allow these permits be written on a total release basis and not just a bright line kind of single number guideline.

Mr. KARR. I would make a couple of comments.

I think the most important step we can take is to establish a cooperative and collaborative arrangement between Federal Government and all of the appropriate agencies and the States with an understanding of a common goal. I think again, as I said earlier, in Albert Einstein's quote, we have to have a new conceptual framework, we can't use the old conceptual framework to fix what is broken.

By working with the States to define the broader goal with respect to water resources, including in that the recognition that regional variation in ecological systems is real, we then establish rules and principles to meet general goals that are region specific. I think it's very important.

We recognize in our educational system that all children are not equally skilled at learning. We have to recognize that biological systems, ecological systems are not equally capable of taking the many punches that human societies direct at them. We have to be more careful about deciding where and when they can be directed without having the same standards of chemical criteria apply everywhere.

Senator GRAHAM. If I could pick up on the comment that you have made, that is the need to develop a new concept, could you help me think through an intellectual framework for directing the Federal effort and resources? That is, how do we tradeoff, if such a tradeoff is necessary and it will be, the relative amount of Federal, human and financial resources that we should devote toward non-point pollution initiatives as opposed to combined sewer overflow initiatives? Those are just two examples of activities which probably have a cost to remedy that is more than we are going to commit to the entire Clean Water Act funding for the period of this reauthorization.

How do we go about thinking through the problem of where our efforts will have the greatest return in terms of the goal of maintaining the biological integrity of our water systems?

Mr. COOPER. I'd like to comment on that.

Many of us were involved with the risk analysis exercise we did for Bill Reilly on setting the relative risk analysis or the priorities in terms of where do you get the biggest bang for your buck, reducing risk to ecology and human health that came out in 1991.

Since then, EPA has funded a number of States to do the same thing. I just got done leading the one in Michigan. We did this kind of State risk assessment analysis and there are about 25 States now doing it but they are setting their own priorities—where do you get the best tradeoff; is it CSOs; is it nonpoint source, and if so, which watersheds. Some environments, as Jim (Karr) said, can take a lot, and some can't. It's kind of a local sensitivity that one gets.

The big problem is the flexibility because most of the monies in the past have gone from the Federal Government to the State to pay for these programs and has been almost like entitlements. They go with a particular mandate, you must spend it on sewer pipes, you must spend it on air, you must spend it on groundwater. So on the one hand, you have a conduit for funneling monies to help support these programs at the State level that are very inflexible, that are usually tied into a media or a commodity. At the same time, you have the States doing what you're asking for, setting their own site-specific priorities as to where they think the biggest bang for the buck is and somehow you're going to have to get that flexibility that you can reorient or redirect funds to where the local needs are even though they come from a historical source, the Federal Government. That's one I think everyone is going to struggle with somewhat.

Senator GRAHAM. So you would say direct the States to prepare that kind of risk analysis and cost benefit and then have the Federal funds with sufficient flexibility that they can flow into where that State determined they would do the most good?

Mr. COOPER. In fact, they are doing that right now. The big problem is I think the tendency for people to want to over plan things. A lot of States know what they've got to do and they want to get on to implementation. I would urge that money doesn't go into plans just to sit on the shelf but to go into programs that actually get out and start solving problems known by us.

Mr. HUGGETT. I think in addition, in the relative risk arena, we have to be very careful that it's not just a social exercise where everybody decides this is what we think is important, it has to get scientific and technical input. I would dare say there are not too many people in the Chesapeake Bay region, for example, that know about the importance of the oyster. So I think you have to have a very prescribed, good procedure that you have to go through. It can't be just a roundtable discussion where one person says we ought to do this and somebody else thinks we ought to do that.

Mr. KARR. I'd like to make a comment on that as well.

If there is one thing that I think would accomplish the goal that we ought to be attacking, that is to move beyond thinking narrowly about what pollution is. In the work that we've done in the last 20 years, we've identified five major ways that humans alter the quality of water resources and almost all of the energies over the past 20 years have been directed at resolving and dealing with only one of those five ways.

Until we see that water resource in a larger context, evaluate which of the factors, not nonpoint versus point, but which of the factors beyond chemical contamination that are degrading the water resource, we will simply not accomplish our water resource goals.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. Thank you, Mr. Chairman.

As I understand what Dr. Cooper just said, and the rest of you have reinforced is that the Federal Government provided money in very substantial sums to waste treatment facilities and so therefore, the sewage that comes out of any municipality in the United States now meets primary and secondary standards and has had that treatment.

Furthermore, we have required industries on a technology-based mandate that they reach certain standards of cleanliness for their outflow and that has been expensive for industry.

What you are saying, if I understand this correctly, is that you should have what's known as risk-based decisions and you determine how great a risk is it to have this outflow from City X's sewage treatment plant. Suppose it came out totally raw and that treatment plant was going to get \$16 million to be fixed up, what you would say is, let's look and see in this watershed where that \$16 million could be most effectively spent and you might well find that it isn't for the sewage treatment plant, this raw sewage doesn't amount to a hill of beans out there, it's no problem.

Indeed, in Narragansett Bay, we've discovered that the raw sewage causes our hardshell clams to grow strong and bigger—not so much for eating but it certainly promotes growth.

[Laughter.]

Senator CHAFEE. Do I understand this correctly? Also, I'm not sure that I understand this risk-based business because these are incredibly complicated matters and for you to come along and say, OK, we don't care what happens at Narragansett Bay with the outflow from the problem sewage plant, what we've really got to tackle is all these septic systems.

Mr. HUGGETT. Senator, I think you're exactly right.

Senator CHAFEE. In my description?

Mr. HUGGETT. Yes, sir.

Senator CHAFEE. I'm not choosing sides here. I'm trying to see if I understand what you're saying.

Mr. HUGGETT. Let me give you a firm example of what happened last year. This is not specifically water but it is the same process.

The U.S. Environmental Protection Agency and the Amoco Oil Company had a joint project at the Amoco refinery on York River in Virginia to catalog and characterize all of the emissions from its facility and in doing so, to do a human health risk assessment based on the admissions, i.e., how many people are at risk in the area around the oil refinery from breathing benzoic emissions.

In doing so, they found that the major source or a major source, it could have been the major but I'm not certain, was from an unregulated emission from the filling of barges with refined oil. When they filled the barge, there are vapors of oil in the barge and as the liquid gets higher, it forces the vapors out into the atmosphere—totally unregulated.

At that time, EPA was I believe was requiring all refineries to update their storm drains and so forth because of benzene emissions. Benzene coming out of the storm drains was trivial compared to the barge emissions. They were going to have to spend \$41 million to upgrade the storm drains whereby changing the nozzles on the hoses to take care of the emissions from the barge, was I believe on the order of \$4 to \$7 million. They didn't have the extra \$4 to \$7 million in addition to the \$41 million, so they had to spend the \$41 million on controlling a trivial amount of the emission when they could have controlled much more. That's a relative risk-based approach. That's very simple to do.

Your example of Narragansett Bay and the leaking septic tanks, that is also a relatively simple risk assessment to do. If you are concerned with the harvest and consumption of hard clams in your case, you would look at the area exposed by the leaking septic tanks relative to the area exposed by the sewage treatment plant and you could make the tradeoff.

Senator CHAFEE. This is the problem, we sit up here and dispense the \$2.4 billion for waste treatment plants and you come along and say, don't do it that way, do it on a risk-based method. First of all, that makes life very difficult, it's pretty clear we can come up with some needs assessment. In Florida, for example, they've got a need for \$2 billion for treatment facilities based on the population and so forth. Whereas, if you say, no, you're not going to go that direction, come and tell us what you need under this risk-based assessment to figure out how you are going to take care of the swamplands, wetlands, and rivers and so forth. That makes life very difficult because Florida can come up with untold needs. With outstanding Governors like they have had in past years who are ingenious, I can't help but believe that their list would be quite impressive.

Also, this maybe is a dangerous game to play, isn't it, because you say, well, what do we care, the sewage really isn't doing much harm at Narragansett Bay, but you're dealing with these very, very complex ecosystems and for you to say that it doesn't do any harm, what we really ought to do is deal with the leaking septic tanks, maybe the answer is we ought to deal with both of them.

Mr. HUGGETT. Quite possibly.

Mr. COOPER. Let me address that because we spend a lot of time going around the country trying to convince people and talk to people about what these relative risks mean. A lot of environmental groups didn't want it done at all. They said, all environmental issues are important. If you rank them, the Government just cut the budget on the bottom ones and laugh all the way to the bank. They didn't want any part of it, they wanted to maintain that all environmental issues are of Grade A1 importance, that they all must be fixed as soon as possible.

Our argument was, you don't have enough money in the Federal Government; you can't print money fast enough to do all of them simultaneously to zero risk. You're kidding yourself and if you don't put some kind of a scientific-based priority setting in, the lawyers will do it and they aren't constrained by any science. So it might not be a precise science but at least it gets some kind of a quantitative criteria for saying, if I can only do one or two of them

today, we've got to live with three or four and just cross our fingers, which ones can you afford to put off and which ones you can't. That's what it basically does.

It acknowledges the fact that you can't go out there and have an affluent society and synthetic chemistry that's throw away and risk free at the same time. Technically, you're kidding yourself. A certain amount of risk might just be a function of your affluence, the way we live.

Senator CHAFEE. My time is up.

Senator GRAHAM. I think that the questions that Senator Chafee has been raising are very fundamental. They are a part of the new conceptualization of what it is we are trying to accomplish in an era of limited resources and I would hope that we would have an opportunity either at another forum such as this or through some exchange of correspondence to further extend this discussion of a new risk-based concept.

Senator CHAFEE. Mr. Chairman, could I ask a couple more questions? I don't want to hold you up if you have to leave. I could chair or do whatever you want.

Senator GRAHAM. I am going to have to leave in about five minutes. I'd like to use my five minutes to move to a different subject and that is the issue of pollution prevention, which is a phrase that has a lot of appeal.

Where is the state-of-the-art being practiced in terms of the prevention of water pollution? If you were to go to a city, a country, an industry, to see the best practices in that area, where would you go?

Mr. CONWAY. I'd like to comment about that. We have a plant in Taft, Louisiana where we're faced with reducing our discharges, especially in terms of BOD and solids. We developed a solution at the end of the pipe which cost \$7 million, but the process people have developed a pollution prevention project which cost \$16 million but recovers 40,000 pounds of product a day and cuts down on releases into the air, but doesn't quite allow us to meet this bright line solid discharge.

We're faced with building an additional treatment plant which can meet this bright line effluent guideline and not through the pollution prevention project which nearly meets this guideline, plus reduces discharges into the air and to the land.

The companies are prepared to do pollution prevention projects, but they need some modest flexibility by their permit writers to do that.

Mr. COOPER. I'd like to comment on kind of a conceptual framework of that. The whole life cycle analysis is being practiced right now in Western Europe. It is actually required by the OECD; they have a green logo labeling that if you go and do that analysis from cradle to grave—you start with mining, cutting a tree, pumping oil to get the plastic, the precursor to polyethylene sacs, cutting the tree for paper sacs—you go all the way through until you recycle it, dump it, incinerate it, and dispose it. You do total cost of the cycle, maybe nine different industries involved. It has both private and public components to it. You do total energy costs, water costs, pollution costs, labor costs and what is the bottom line for this product versus that product? It is a total systems cost accounting

where you calibrate different alternative production processes based on the common units, environmental cost per unit per good produced from cradle to grave.

It is something that is coming. There are some industries in this country that are doing it. Canada is talking about having that kind of green label, friendly consumer type. It's all based on these cradle to grave kind of mass balances, what are the total costs in real, consumable and nonconsumable goods.

In the long run, that's the way to go. It's very data intensive. The cycle itself is not just one industry. One person does the mining, some other company does the precursors, someone else does the product, someone else sells it, someone else markets it, someone else picks it up and incinerates it. So the information is scattered but there is a real, good conceptual framework out there to use if you want to start doing it.

Mr. KARR. Some call it industrial ecology. It's the application of ecological principles and efficiency to the industrial process from the beginning to the end of that process.

Senator GRAHAM. I mentioned earlier that at the conference in Rio last June, there was a lot of discussion about this from the Europeans who indicated or at least gave the impression that they thought they were ahead of the United States in the application of these principles. Do you think that is true and if so, what could we learn from the Europeans?

Mr. COOPER. My impression is it's true. That's where a lot of the stuff has been developed. We've talked about it and they've done it. They've actually got the labeling, they've got the legislation through Brussels, the whole works.

In terms of does it work, I guess you've got to wait and see in the sense that the ultimate test of if it will work is whether the consumer will cast their ballot by how they spend their money in the marketplace. If they're willing to spend a little bit more to buy something that's environmentally safe, then the system works. I'm not sure it has been out there long enough to really know whether people talk green or whether they actually behave green. That will be the bottom line.

Senator GRAHAM. On the issue of giving States more flexibility relative to the use of Federal funds so that they can apply it against a broader range of potential activities, Senator Chafee has talked about some of the practical political problems that raises. Another is the fact that we allocate the Federal money now in large part on an assessment of needs, the needs being defined as requirements to bring wastewater treatment plants into compliance.

If you are going to delink funding from wastewater treatment plants and allow States to utilize their available funds against a risk analysis of greatest cost benefit, what would you recommend might be the criteria for the distribution of the Federal funds to the States?

Mr. HUGGETT. First of all, I think you have to have some goal established for the bodies to work. This is perhaps the cooperation that Administrator Browner was talking about and some of us have mentioned. You have to get all the players in the room, in-

cluding the scientists, and decide what do you want of this body of water. Obviously, it can't be a sewer.

Senator GRAHAM. Our problem is a more immediate problem. Currently, we have a law that says whatever Federal funds are available are going to be allocated among the 50 States and participating territories and the District of Columbia on a formula which takes into account quantifiable items like what's it going to cost to bring all the sewage treatment plants in the State of Michigan up to an acceptable standard and as a percentage of the national universe of costs to achieve the same objective, what is Michigan? Is it 5 percent of what it's going to cost the Nation? Then we factor in some population factors.

If you're going to go to a more flexible standard, what would be a fair way to go about the process of allocating the Federal funds?

Mr. COOPER. I think Bob actually came close. If you give categorical grants based on population, miles of river, square miles of surface area, all the mechanical things, the problem is you come up with a fixed kind of formula for allocating your scarce resources without factoring in have you solved the problem.

We've been spending millions of dollars in the Great Lakes since the 1940's. I keep arguing if you keep saying the Great Lakes are dying, that means you wasted the first \$100 million with no benefits. If you don't see any further gain, you ought to get to a point where enough is enough and you can allocate fewer funds to the Great Lakes because you are on top of most of the problems and spend it on the Chesapeake Bay or Narragansett Bay or the Gulf of Mexico.

Obviously from a political point of view, you've probably got a lot of people who don't want to hear that, but if some see a gain, if you're doing a good job, you're mitigating or remediating the sources, the systems ought to clear up to the point where you don't need to continue to dump money at the same rate.

If I were doing it, I'd start with a goal of how clean is clean and as you approach it, you get the squeal out of the pig and you can put your money and energy somewhere else. My governor is not going to like me to say that.

Senator GRAHAM. Dr. Karr and then Mr. Conway.

Mr. KARR. The issue to me is not how clean is clean, but how does society derive values from those water resources in a much larger context. As long as we're asking the question, how do we decide whether we should put it into more and more secondary treatment, we have missed the question, in my view. The question is, what is the end point that we want in terms of the quality of water resources? Then we ask the question is putting more money into wastewater treatment plants the solution to that? I submit, oftentimes, it will not be. What we have to do is get a better process to ask that first question, not be driven by chemical criteria and technological applications.

Senator GRAHAM. Yes, Mr. Conway?

Mr. CONWAY. Being an engineer, my comments are more quantitative perhaps.

What I would do to set priorities is look at risk reduction, the amount of risk reduction which the State can associate with these requests and have the environmental economists dollarize these

risk reductions in some standard way which is agreed to by a group of them.

Senator GRAHAM. Gentlemen, I appreciate very much your participation today. I regret that I'm going to have to leave. Senator Chafee can stay and has further questions. If you would indulge us further, we may have some written questions based on the testimony that you have given that we would like to submit for your further response.

Again, thank you very much.

I might say, Dr. Cooper, my father was an alumnus of Michigan State University and I am pleased to see the leadership which that great institution is continuing to provide.

Senator CHAFEE. [Presiding] Thank you, Mr. Chairman.

Let me give you a hypothetical. You have a pristine stream, you have a chemical company that's going to set up on the stream that is going to discharge x amount into it that will cause 10 percent degradation of the stream—acceptable, no problem.

Under the currently existing system that we have, which was technology-based, we say you've got to eliminate or reduce the waste that is coming out from Company A on this stream. That's what we say now.

Under your system, as I understand it, you'd take a look at the stream and say risk-based, no problem. For the illustration I'm using here, let's assume that 10 percent causes no problem, no recognizable problem. Along comes chemical Company B, again emitting just 10 percent of damage to the stream. You can obviously see where my question is leading.

Let's say when you get to 50 percent, you get to damage where in your risk assessment you can spot the damage, so plants A, B and C and D with 40 percent are home free. Along comes plant E, who is going to go over the hump, get it up to 50 percent. Now you would say, you take a risk-based assessment and you say to plant E, you've got to monitor your discharges, you've got to put in best available technology because under our risk-based assessment you are causing damage to the stream. You've gone over the hump. So it goes for each of the successors.

Indeed, you might say this might be a synergistic effect here where E just produces that final amount that causes terrific damage, so that you say to E, you've really got to strap way, way down because you're the people that have just pushed this thing over the hump.

What do you say now?

Mr. COOPER. Dow Chemical, Midland, Michigan, the City of Midland, Michigan had a nuclear plant they wanted to go on-line and their emission zones all overlapped. The way we do it in Michigan is if you're far enough downstream where the chemicals are degraded back to background so there is no overlap in the mixing zones, they are independent assessments. If, in fact, those mixing zones are going to overlap and in fact, they are adding to the amount of chemical in the water itself, if you add that fifth individual, the other four have to back off first to make room for it or you don't license to go on-line. That's an alternative strategy.

Senator CHAFEE. This is the thing that absolutely drives those companies crazy. You've got a moving target, they say to us. We

came here, we built our plant on this lovely stream, you said it was OK. We could have invested money at a far lower rate at lower cost at the time to take care of this and you said no problem. Now, five years later, you're coming along and harassing us. I'm talking Company A now.

Mr. COOPER. In the real case, since Midland, Michigan and Dow Chemical wanted that nuclear plant because they were sharing the steam, there was cogeneration, it was in their best interest to cooperate. If they don't, then that plant doesn't go on-line, period. It goes to some other stream. You can't just assume that economic development can locate anywhere it wants irrespective of the density that's already there.

Senator CHAFEE. It seems to me that what you've set up under your suggestion—I'm not dropping this on you—but you're saying to a plant that might locate in Pawtucket, Rhode Island on the Blackstone River, you've got to meet all kinds of technology-based standards; you've got to have the very best equipment, but if you go down to Alabama where there is a perfectly lovely, clean stream, go to it, pollute all you want until you get up to that threshold where the stream is being ruined.

Mr. COOPER. But see, it depends on the State. In my particular State, we have four numbers. We have best available technology, which is technology-driven; we have a human health standard in terms of drinking water; we have a human quality contact standard if you swim in it; and we have an ecological standard we get from fish and zooplankton. Whichever the lower number is drives the permit, the lower of the four numbers is the one that drives the permit.

If the technology is there, it's economically viable, it's used by your competitors, it's not way out in left field, you're going to put that on just because it's available and it's cost effective.

Senator CHAFEE. I think that there is a lot in what you say, and this has been stimulating. Maybe the solution is that you would continue with our waste treatment grants, shave them down some and give the States some money for totally discretionary expenditures. The case you used, Dr. Huggett, of the barge where instead of spending \$41 million, if somebody spent \$7 million, you'd do a lot more for the cleanliness of the lakes and the waters.

I just want to ask you one question, Dr. Karr. I don't know what biological monitoring means. I perhaps would use it sometime because it's a wonderful sounding word and I ought to incorporate it in some of the speeches I give, but what exactly do you mean by biological monitoring?

Mr. KARR. Ambient biological monitoring involves examining the biota (fish, invertebrates, plants, and so on) of a water body. The species composition, relative abundance, and health of individual organisms measure local biological conditions and, thus human-induced degradation of streams, lakes, and estuaries.

Biological monitoring is an essential supplement to chemical monitoring because it provides a more direct and accurate evaluation of resource condition. Biological monitoring is going into the field and asking about the quality of the environment that the organisms live in, the quality of the water resource system. Does it support a high quality, biological community, say salmon in the

rivers of the Northwest or does it support nothing but sludge worms and carp? Society would like to have biological communities, I submit, that are of high quality that produce harvestable sport and commercial fish for clams, oysters and so forth.

We must monitor the biology of the river, like we sample blood from humans. It tells the health of the human or it tells the health of the watershed. The only direct way to determine the health of the watershed in an integrated fashion is to ask the biology that lives out there whether it is the way it ought to be or not. That's what I mean by biological monitoring. It reflects a broad range of biological conditions and attributes. It's a direct assessment of the end point, the societal goal, that we have in terms of quality of water resources.

You can do this with fish, you can do it with invertebrates, you can do it with algae. It's better to do it with all of them. Let me give you an example. I was just involved in a case in an eastern State where there were small package wastewater treatment plants around a suburban environment. These were put in rather than major sewage treatment systems because they are cheaper for small, local housing areas.

They discovered that the outflow of some of these package treatment plants violated chemical criteria. The city then proposed to spend \$13 million to put in a sewer collector system and a major wastewater treatment plant. In doing that, they would have destroyed all of the water resources in that area. They would have completely destroyed the channels and the biology of the river.

By the use of biological monitoring, the State showed that this activity would degrade the resource rather than improve it and they stopped that project.

Senator CHAFEE. I think that's interesting.

Mr. Huggett, in the last part of your statement, you made the following quote, which I hope you're right. You say, "Our ability to manage wastewater in coastal areas has improved greatly over the past decade because of advances in science and engineering."

I've been on this committee for 17 years and I'm not so sure that I've seen the management of waste water greatly improved because of advances in engineering.

Mr. HUGGETT. I would agree with you. I haven't seen it either. I said the capability is there.

Senator CHAFEE. You're saying that we can do it but we don't?

Mr. HUGGETT. Yes, sir.

Senator CHAFEE. Which is kind of an indictment of our system. I appreciate all of you coming. You've been very helpful and stimulative. You're nice to help us out.

The hearing is adjourned.

[Whereupon, at 1:00 p.m., the subcommittee was recessed, to reconvene at the call of the Chair.]

[Statements submitted for the record and the bill, S. 1114, follow:]

TESTIMONY OF CAROL M. BROWNER, ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee. I am Carol Browner, Administrator of the Environmental Protection Agency (EPA). Accompa-

nying me this morning is Martha Prothro, Acting Assistant Administrator for Water. Thank you for inviting me to testify before you today. I look forward to outlining for you my vision for Clean Water Act reauthorization.

First, however, I would like to applaud the leadership demonstrated already by this Subcommittee and the full Committee as it undertakes to draft Clean Water Act (Act or CWA) reauthorization legislation that I hope will be focused, effective and realistic. The task before us is a very difficult one, because although the Act is fundamentally sound, today's new challenges are more subtle and perhaps less readily amenable to traditional legislative and regulatory solutions than those of the 1970s and 1980s. The CWA gives us broad and flexible authorities and is considered by many experts to be one of the best federal environmental statutes. Nevertheless, we need new and innovative approaches to complement the existing array of successful tools and programs we already have to protect human health and the environment, and we need ways to promote the concept of pollution prevention through the Act.

Although I have not had the opportunity to review in detail the bill introduced by Senators Baucus and Chafee, I believe it generally focuses upon the themes that must be addressed. For example, I am very pleased to be advised by my staff that the bill does acknowledge in part the importance of developing effective controls on polluted runoff, which is the leading problem facing our Nation's waters today. In my view, if we accomplish nothing more than this through reauthorization, we can credit the legislation a success.

I also want to thank the Subcommittee and the full Committee for involving EPA staff in your deliberations on the technical aspects of the development of this bill. That spirit of cooperation shows that you not only value the expertise of EPA staff and the support of the Administration in this legislative endeavor, but also that we share the view that reauthorizing legislation must be focused, realistic and implementable.

The new Clean Water Act must focus effectively on the most important water pollution problems to the extent they cannot be adequately addressed under current law. Its mandates must also be realistic in light of the resources we can reasonably expect to be available to federal, State and local governments and the private sector. I am concerned that an attempt to enact comprehensive changes to the Act may distract us from these paramount objectives and may divert scarce resources away from our true priorities. I hope we share the goal of developing and ultimately enacting legislation that strikes an appropriate balance between continuing to emphasize traditional water pollution controls and addressing the broader ecological risks threatening the integrity of our waters. We pledge to you that a realistic law will be fully and enthusiastically implemented by EPA. We continue to be willing to help you embody these principles into law. I look forward to studying the Baucus/Chafee bill in detail with these principles in mind. In the coming weeks, we will work with you to help determine whether the provisions proposed will accomplish their goals effectively and to help estimate the costs to government and society to implement their specific mandates.

I would like to begin by commenting on the role of the federal government in regulating and funding to protect and enhance water quality. The federal Clean Water Act, roughly in its current form, was deemed necessary in the early 1970s in part to assure that individual States would not be economically disadvantaged by their efforts to protect public health and ecological resources. It provided a level "playing field" by setting minimum technology-based requirements for publicly owned wastewater treatment plants and industrial dischargers across the nation. It provided for scientific research and technical guidance on water quality to be developed at a national level because individual States could not acquire or maintain the expertise and abilities to do all this on their own. It recognized that States and localities should continue to be the primary implementers of water quality programs but that there is also a strong national interest in public health and ecosystem protection and, therefore, a need for federal support of these State programs. Because the benefits of pollution control often accrue mainly to those downstream, it also provided for federal financial assistance to local communities facing significant costs for municipal sewage treatment.

Out of this vision grew a partnership among local wastewater treatment authorities, State water pollution control agencies, and the federal EPA. That partnership remains strong and viable today. Over the coming weeks, you will undoubtedly hear a lot about the areas of tension and friction among the partners. A full airing of any problems among partners is appropriate in the development of new legislation. After all, you may be able to address some of the sources of these problems during reauthorization of the Act. But the partnership is still strong, still essential. The

partners have achieved a great deal together. By some estimates, we have reduced water quality impairments by over 50%, even though economic growth has continued in the same period. The partners continue to work towards a common vision of clean water for all our people's health, recreations and economic well-being. We need to foster the partnership because without it we will surely fail.

One issue for all of us, of course, is how to measure our progress. The water quality program has been struggling with this issue from its earliest days. Our people want clean water and healthy ecosystems, but what does this mean? How clean is clean? We have counted the numbers of permits issued, the pounds of pollutants removed from effluents through treatment, the numbers of enforcement actions, the number of fish kills, shellfish bed closures, recorded exceedances of water quality standards, dollars spent on pollution control, and on and on. All of this information is helpful and meaningful at some level in judging our progress. But the overall success of the national program, State programs and local programs must be judged more wisely, more comprehensively than in the past. We need to develop indicators of success based to the extent possible on environmental results, not just administrative actions. EPA is now working to achieve this for the water program and we have reduced the administrative "beancounting" requirements previously imposed on States in order to move towards a more meaningful measurement of progress in achieving health and environmental goals. We will continue to work with States and other federal agencies to improve our ability to judge success in a way that fosters innovation on site-specific solutions.

FUNDING

As we work to address the remaining threats to our Nation's waters, we must also recognize that new initiatives place a significant increased burden on State and federal water quality protection programs. Without adequate funding, State and local water and wastewater programs will not be able to fulfill the mandates of the CWA or meet the expectations of the public. Therefore, we need to be sure that adequate resources are available—and available for the right purposes—in order to ensure continued progress in protecting water quality.

In 1981, the federal government committed to a ten-year program of \$2.4 billion per year for financing the construction of municipal wastewater treatment facilities under the CWA's Title II Construction Grants Program. This level of funding was considered adequate to meet the estimated remaining highest priority needs for interceptor sewers, wastewater treatment plants, and sewer rehabilitation projects to correct infiltration and inflow problems. Other major infrastructure needs, such as correction of combined sewer overflow (CSO) pollution problems, were not fully considered in the 1981 plan. In 1987, Congress established the State Revolving Fund (SRF) program to provide long-term financial assistance for municipal wastewater infrastructure needs, and phased out the Title II construction grant program. A total of \$18 billion was authorized for these two programs through fiscal year 1994, principally to assist municipalities with their remaining municipal sewerage needs and to start to address the more recently identified needs such as CSO correction. The SRF program also provides support for nonpoint source and estuary management activities.

The transition from the Title II construction grant program to the Title VI SRF program has gone well. All States now have approved programs and are receiving capitalization grants. Over \$7 billion dollars of federal capitalization funds and \$6 billion of State matching funds and bond proceeds have been made available for needed wastewater projects. More than 1300 municipalities have received low interest loans through the SRF. Approximately 70% of the loan assistance provided to date has been for financing the construction of secondary and advanced wastewater treatment plants. Another 25% has been used for sewer construction, with the remaining 5% available for storm water and nonpoint source management and other projects.

Although EPA has not yet published data from the 1992 survey of the States regarding needs for municipal wastewater treatment, preliminary estimates confirm that needs continue to grow. Total documented needs have increased in constant dollars from \$90 billion in 1988 to \$108 billion in 1992. In general, this increase is caused by one or more of four factors: (1) continued population growth and redistribution; (2) deterioration of older sewers and other facilities; (3) new requirements to protect water quality; and (4) newly eligible activities. For example, advanced treatment needs have grown by \$10 billion in constant dollars because secondary treatment controls have proved insufficient to meet water quality standards. Documented needs for CSOs have increased by \$5 billion largely because the costs of CSO con-

trols are better understood today. The \$3 billion increase for new collectors is attributable to population growth and redistribution since the last survey.

As daunting as these figures are, there is reason to believe that some needs are seriously underestimated. EPA, States, and localities are still determining how to meet CWA requirements for CSOs and storm water management; therefore, the documented needs may not yet fully reflect the costs of correcting these problems. In addition to sewer and wastewater treatment construction needs, States reported information on two new significant categories of needs prompted by new mandates of the 1987 amendments: storm water pollution management and nonpoint source pollution control. The estimates reported for these two categories in the 1992 survey are at least \$10 billion in constant dollars. And, we have no precise estimate regarding the funding needed for aquatic ecosystem protection and restoration.

In general, States and local communities cannot afford these activities without continued federal support. Because of its revolving fund characteristic, over a twenty year period the SRF can fund three times the value of projects that could be funded by outright grants. Consequently, while \$18 billion was authorized in 1987 to end federal wastewater assistance, the President is seeking a new authorization for clean water State revolving funds to help communities address these new storm water needs, as well as traditional wastewater needs. The President's investment proposal would provide \$7.2 billion in capitalization grants between fiscal year 1994 and fiscal year 1997 to capitalize these State revolving funds.

WATERSHED PLANNING

The principal goal of the CWA is to protect and restore waterbody uses by ensuring their biological, chemical and physical integrity. As the water program matures, we are expanding our focus beyond a simplistic emphasis on chemical pollution to one that provides a greater understanding of ecosystems. Therefore, EPA strongly supports what we call the "watershed protection approach," which is a way of promoting a more holistic, targeted approach to the complex and often persistent problems in watersheds around the Nation. By focusing on the important stressors within each unique watershed rather than trying to apply the same remedies to all watersheds, we believe that we can address the watershed's problems more comprehensively, efficiently and effectively, and at the same time take better advantage of the energy and resources of our public and private partners.

We can no longer assume that "national" solutions will solve all local problems. By adding a stronger geographically-based approach to protecting our aquatic resources, we can ensure that solutions—shaped by the local community as well as by State and federal participants—are carefully tailored to address the highest priorities and unique circumstances facing each locality. This local tailoring can help ensure that we achieve the dual goals of adequately protecting our water resources and doing it in the most cost-effective fashion. We plan to continue working with USDA's Soil Conservation Service in delivering the watershed approach where watersheds are predominantly agricultural. And, we will work with the Forest Service and the Bureau of Land Management to deal with pollution emanating from federal lands. As we build partnerships, we concentrate our resources on locally targeted problems, foster new, innovative approaches and solutions, and promote implementation of these solutions through the empowerment of local stakeholders.

The watershed approach is not new to EPA and components of the approach have been used effectively in several geographically-targeted programs, including the National Estuary Program (NEP) and initiatives focusing on the Great Lakes, the Gulf of Mexico, and the Chesapeake Bay, and the Near Coastal Waters Program. For example, the Great Lakes Program establishes a partnership of the federal government and appropriate State, tribal, and international agencies to work together in remedying the problems facing the lakes, which together comprise 20% of the world's supply of fresh surface water. The Chesapeake Bay Program calls for EPA and other federal agencies, in concert with the Bay States, to implement programs to abate pollution for the protection and restoration of living resources in this wonderfully vigorous estuary—the largest in the U.S. Under the NEP, States nominate and EPA selects nationally significant estuaries threatened by pollution, development, or overuse. EPA, other federal agencies, the States, local governments, interest groups, and the public jointly identify problems, and develop and carry out comprehensive management plans to protect these recognized estuaries. In addition, by adopting State water quality standards, States tailor water uses and criteria to meet unique, local requirements. Yet these are only a start. We must evaluate the watersheds individually and let the people who depend on them have a principal role in deciding what solutions may be appropriate.

In order to promote integrated planning and watershed protection, I believe we need to provide incentives to the States to develop plans, on a watershed basis, for all impaired and threatened waters, as well as waters that the State determines need special protection or restoration, such as outstanding national resource waters, wetlands, estuaries and drinking water supplies. We are currently examining options for appropriate incentives.

We must also apply a similar approach for the Nation's ground waters. We are increasingly finding that in certain watersheds ground water recharge to surface waters can be a critical factor in determining the ecological health of aquatic systems. We need to ensure that ground water is incorporated into our watershed approach when it significantly influences surface water quality, and we need to guard against the possibility of transferring a pollution problem from surface water to underground sources of drinking water.

I believe the CWA generally provides EPA and the States with the authority we need to look holistically at the entire aquatic ecosystem. By focusing our attention on watershed management in the context of reauthorization, however, I would like to encourage Congress to promote this approach by: harmonizing, and where necessary, improving our ability to address the physical and biological, as well as chemical, integrity of our Nation's waters; emphasizing watershed-level ecological risk management; coordinating water quality standard reviews; consolidating planning and priority setting requirements under the Act; and modifying the timing of biennial water quality assessments and reporting under 1305(b).

The watershed approach I have sketched focuses on carefully-tailored, cost-effective solutions to address important sources of risk to the watershed, including nonpoint source pollution, habitat degradation, wetlands loss, and threats to ground water. I believe that by focusing on watersheds as a whole, we can better identify causes and effects of high-priority problems and develop effective, practical solutions while at the same time maintaining strong national programs to protect the gains of the past. The watershed approach is essential to ensure that we succeed in restoring and protecting the Nation's aquatic resources. I would also like to point out that the application of the watershed approach does not imply a backsliding of current requirements. For example, national secondary treatment requirements would remain, and the focus would be on eliminating threats that are not addressed through such requirements.

POLLUTED RUNOFF (NONPOINT SOURCE POLLUTION)

Polluted runoff, which is the contaminated runoff from agricultural lands, grazing and forestry operations, and those urban areas and commercial activities not regulated by NPDES permits, is one of our most vexing water quality problems. Siltation, nutrients, and pathogens are the most common pollutants causing the degradation, which is also known as nonpoint source pollution. In addition, polluted runoff stemming from increased population growth in sensitive ecosystems, such as in coastal areas and wetlands, also poses a serious threat to waterbody integrity. Much of the most serious pollution comes from agricultural runoff, including crops, grazing, and animal waste.

Polluted runoff most commonly results in damage to natural ecosystems, including alteration and destruction of habitats. Fertilizer use, and other activities such as faulty septic systems, inadequate waste water treatment facilities, industry, feedlots, and pesticide use have also been linked to contamination of ground water. These problems are particularly acute in rural areas of intense agricultural activity where ground water is used as the primary source of drinking water for 95% of the population.

We already possess some tools to help. Section 319 of the CWA, enacted in 1987, required States to assess their nonpoint source problems and to develop programs for managing nonpoint source pollution, backed by federal grants. The Coastal Zone Act Reauthorization Amendments of 1990 provided a somewhat stronger approach for coastal areas in 29 States and territories, centering on new State programs to implement the best available management measures economically achievable for categories of nonpoint sources, i.e., agriculture, silviculture, urban activities, marinas, hydromodification, and loss of vegetated ecosystems. The new State programs will also provide for the implementation of additional management measures as necessary to achieve and maintain water quality standards and protect designated uses. We believe that these coastal nonpoint programs will represent an important tool in the restoration and protection of our Nation's impaired and threatened coastal waters. The 1990 Farm Bill also helps, especially through its Conservation Reserve and Conservation Compliance, and Wetlands Reserve programs.

The CWA recognizes that States and local governments should play major roles in addressing polluted runoff because of its diffuse nature and because of the need for broad-based teamwork to identify and implement the solutions. Over the last four years, we have provided both technical assistance and over \$190 million in financial assistance to help States with approved nonpoint management programs provide technical assistance, education, and implementation of best management practices, both State-wide and in priority watersheds. In addition to the \$50 million per year currently being appropriated for nonpoint source grants, the President is proposing to invest an additional \$180 million in nonpoint source grants between fiscal years 1994 and 1997. These investments would help restore watersheds currently being degraded by polluted runoff.

We believe that we and our many partners are making progress with these and other tools. Based on my experience in Florida, however, I believe that State and federal programs alone will not work. Local initiatives, commitments and incentives are crucial to creating the sense of volunteerism and long-lasting change that will be necessary for success.

At this stage, I believe there are several basic principles that should guide our discussions of the problem of polluted runoff. Specifically:

- While § 319 nonpoint management programs provide a good starting point, stronger measures are needed.
- A stronger watershed focus should be brought to bear so that farmers, foresters, and other stakeholders can better understand the connection between what they do on the land and the benefits they can help to bring to water quality.
- Where feasible, pollution prevention should be the approach of first choice for addressing polluted runoff.
- Voluntary, targeted approaches should remain the primary focus, but backup enforcement requirements at the State and federal levels are needed when voluntary approaches fail to produce adequate incentives and necessary environmental improvements.
- EPA should help to set clearer performance expectations and technical baselines for nonpoint source controls and management practices. We must improve our scientific understanding of the transport, impacts, and means to control problems such as nutrient and siltation pollution, and improve the tools to address them. In the effort, we will need to work closely with other federal agencies, such as the National Oceanic and Atmospheric Administration, the U.S. Department of Agriculture and the Departments of Interior and Transportation.
- We should encourage innovation where appropriate, including public-private partnerships and greater use of market-based incentives. Federal funding should support State and local actions but should not be a prerequisite to accelerating progress.
- We should also work closely with other federal agencies to provide for the implementation of similar programs on large tracts under the stewardship of Federal land management agencies.
- We should set clear expectations that water quality programs will be focused on aquatic ecosystem protection, not just on the water column.

OTHER WET WEATHER FLOW ISSUES

Storm Water

Storm water is a major program area in which EPA and the States together have made some important progress. As you know, the 1987 amendments to the CWA required the Agency to establish a two-phased regulatory program to address the discharge of contaminated storm water to our Nation's waters. States have reported that storm water discharges from diffuse sources are responsible for approximately one third of remaining assessed surface water impairments in lakes and estuaries.

With the promulgation of the Agency's Phase I storm water regulations in November 1990, implementation of the program is well underway. Over 100,000 industrial activities and more than 250 municipalities and counties are covered under Phase I. To date, tens of thousands of facilities and storm water activities are covered under general NPDES storm water permits (although many more remain to be permitted). EPA and the States are now beginning the more difficult process of assuring that necessary controls are implemented as required by those permits. We are in the process of developing individual NPDES permits for municipalities and counties covered under Phase I. Both EPA and the States have placed a very heavy

emphasis on pollution prevention and implementation of best management practices as the first step in implementing storm water programs.

While Phase I is a major challenge and much more work remains, Phase II of the storm water program represents an even larger undertaking with as many as one million additional commercial, retail, and light industrial activities potentially affected. Also potentially included in this Phase II group are municipalities under 100,000, as well as emerging growth and new development areas around existing urban centers that are not covered under Phase I. A number of issues must be addressed in connection with the implementation of Phase II, notably whether certain dischargers should be targeted for permitting before others, the possible menu of regulatory and nonregulatory mechanisms that could be used to address high priority sources, and appropriate deadlines.

We are presently developing different options for a Phase II strategy that will provide for the most effective targeting of high risk sources, identify appropriate roles for federal, State and local government, and strike the right balance between pollution control under the nonpoint source program and the issuance of permits under the NPDES program. We think potential Phase II sources outside urbanized areas may best be addressed under an expanded and strengthened nonpoint source program.

Combined Sewer Overflows

Another remaining point source problem is combined sewer overflows (CSOs). More than 1100 cities (85 percent of which are located in the Northeast and Great Lakes areas) which serve a total population of 43,000,000 have antiquated combined sewer systems. During wet weather events, uncontrolled combined sewer systems discharge raw sewage, commercial and industrial wastes and storm water. States' water quality assessments have shown CSOs to contribute to water quality impairments, beach closures, fish kills and shellfish bed closures.

In 1989, EPA took steps to address the CSO problem by issuing a CSO Strategy calling for States and municipalities to focus greater attention on controlling CSO discharges such that waters impaired by CSOs would attain water quality standards. EPA has recently circulated a new draft Combined Sewer Overflow Control Policy that provides additional guidance on meeting the 1989 CSO Strategy. Through negotiated dialogue with State, environmental, and municipal representatives, the draft policy developed a framework for future action. Public comment has been supportive of the draft policy. The draft policy contains provisions for developing appropriate, site-specific NPDES permit requirements for all combined sewer systems that overflow as a result of wet weather, including requirements to ensure attainment of water quality standards. The policy also announces an enforcement initiative to require immediate elimination of overflows that occur during dry weather. The existing statute appears to provide sufficient legal authority to implement the draft policy and to bring CSOs into compliance with statutory requirements, including the attainment of State water quality standards.

POLLUTION PREVENTION

We must also focus on pollution prevention. In the water program, as in other environmental programs, traditional end-of-the-pipe approaches have yielded significant gains in environmental quality. However, we now realize that treatment and disposal will not be sufficient to ensure continued progress and that end-of-pipe approaches can raise costs. A more comprehensive, cost-effective prevention-oriented approach within our base regulatory program will allow us to move even more effectively toward meeting the overall goals of the CWA.

There are numerous other benefits offered by implementing a pollution prevention philosophy. By reducing reliance on end-of-pipe or permit-by-permit controls, prevention also reduces the likelihood that a "solution" to one pollution problem will simply transfer significant risks from the residual pollutants to different media. In particular, we have seen the transfer of surface water contamination to ground water contamination. Pollution prevention approaches, such as switching to different process solvents and reducing water use, have the potential to produce permanent solutions to environmental problems—solutions that require less investment in expensive pollution control and greater emphasis on good planning and strategic designs. Pollution prevention includes conservation techniques and changes in management practices to reduce significant adverse effects to sensitive ecosystems and resources such as wetlands, ground water and estuaries. In addition, prevention may be the most cost-effective way to address many of the remaining sources of water pollution such as agriculture and urban runoff, the cumulative effects of in-

cremental habitat loss, or numerous small sources, which can result in significant impairments of our water resources at the local level. Pollution prevention also complements the watershed approach. It offers additional tools that give us greater capability and greater flexibility to address localized problems requiring heightened attention.

TOXICS/WATER QUALITY STANDARDS

The goal of the CWA is to "restore and maintain the chemical, physical, and biological integrity of our Nation's waters." Under this mandate, we have developed sound programs to reduce point source discharges of pollutants entering all surface waters, including lakes, rivers, estuaries, oceans, and wetlands. Under the CWA, EPA develops national uniform effluent limitation guidelines, new source performance standards, and pretreatment standards for categories of industries, such as electroplating, pharmaceutical manufacturing, and textiles. These effluent guidelines and standards generally reflect application of the best available technology that is economically achievable. They also include best management practices. Early guidelines covered roughly 129 toxic pollutants, while our more recent guidelines have covered over 400 toxic pollutants. Sewage treatment plants, in turn, are subject to secondary treatment requirements. Those regulations set end-of-pipe performance standards, based on the treatment technology available at the time, allowing dischargers flexibility in choosing the method of compliance.

The Clean Water Act gives States the primary responsibility to develop water quality standards for waters within their jurisdiction. State water quality standards provide the basis for many federal and State water quality management decisions. In developing these standards, States designate specific uses for their waters—such as fishing, swimming, or drinking—and, adopt criteria to protect these uses. Traditionally, criteria are pollutant-specific and define levels of pollutants that will not interfere with the designated use. States typically use both national criteria guidance issued by EPA and other scientific information to develop their standards. Recently, through State and federal rulemaking, numeric water quality criteria for "priority" toxic pollutants, are now in place for waters impaired or threatened by those pollutants. However, as States' own water quality assessments point out, chemical-specific standards alone are inadequate to protect waters from the greatest threats to their full use. EPA is therefore developing criteria guidance for States to use in adopting standards to address physical and biological parameters. In addition to uses and criteria, State water quality standards programs must include an antidegradation policy to ensure that existing uses and high quality water resources are maintained and protected. States must review their standards every three years to ensure that they remain adequate to address emerging problems, reflect new scientific and technical information, such as additional criteria that may need to be adopted to fully protect designated uses, and are updated to account for improvements gained.

Historically, EPA has emphasized chemical-specific pollutant criteria to address impairments in our Nation's waters. Not only the goals of the Act, but also the condition of our waters have convinced us that EPA needs to focus not only on the chemical, but also the physical and biological components of the aquatic ecosystem. We need to set priorities—and to involve the public, States and federal resources management agencies in setting priorities—so that we focus our criteria development resources on the highest priority problems where we can get the greatest reduction in risk. As a result, we would have a sounder basis for devising solutions to the problems causing the greatest impairment of our waterbodies, including habitat destruction and species loss and reduced diversity.

ENFORCEMENT

Essential to the success of the CWA is the presence of a vigorous enforcement program. Enforcement and the manner in which we exercise the discretion to use enforcement tools remain an integral component of a successful environmental program. One successful example of EPA's enforcement effort is the National Municipal Policy, under which States and EPA assured municipal facilities met the CWA July 1, 1988 statutory deadline for wastewater treatment. Largely as a consequence of the National Municipal Policy, of the 4,000 major municipal NPDES permittees, the number in significant non-compliance has decreased from an average of 150A in fiscal year 1986 to 90A for the first quarter of 1993. In 1987, 74% of the municipal facilities had installed treatment necessary to meet basic technology-based requirements. In 1993, that number has increased to 97%.

EPA has also implemented an aggressive administrative and judicial enforcement program. In fiscal year 1992, EPA took approximately 1450 formal enforcement actions under the CWA. Of these, 272 involved the assessment of penalties totalling \$23,066,200. Further, over the period of time from 1989 through 1992, the average judicial penalty has increased from about \$ 143,800 to about \$414,500. The average administrative penalty has also increased over the same time period from \$17,080 to \$22,895. Since 1975, the Agency, along with the assistance of the Department of Justice, has concluded 904 judicial cases and, since 1987, 802 administrative penalty cases, for a total of over \$125 million in penalties.

CONCLUSION

Reauthorization of the CWA provides us with a valuable opportunity to focus on the most important problems facing our Nation's waters and to address them in a realistic, implementable way. We believe that controlling of polluted runoff can and should be the single greatest achievement of an amended Clean Water Act. We also believe that adopting a watershed protection approach to protect the biological and physical, as well as the chemical, integrity of our Nation's waters is very important. Similarly, we recognize that we must increase our emphasis on pollution prevention as the most practical and cost-effective means of meeting the goals of the Act. In addition, in concert with a strong point source program, we must focus considerably more attention on the sources of polluted runoff and wet weather flows; we cannot forget that these pollution sources contribute heavily to the persisting impairments our waters experience. We must undertake to streamline the process of administering and enforcing the CWA. We must consider how to better address ground water protection.

I recognize that I have described a large task, but our Nation's waters issue us a stark challenge that we cannot ignore, except at our own cost. I believe you share with me a respect for the purity of our streams, the diversity of life in our estuaries, the high productivity of our wetlands, the dynamic interplay of forces in our watersheds, and the safety of our drinking water. Therefore, I look forward to working with you, Mr. Chairman, this Subcommittee, the Members of Congress and their staff, our sister federal agencies, State and local governments, and industry and environmental groups to meet this challenge.

SUBMISSION BY WILLIAM COOPER, INSTITUTE FOR ENVIRONMENTAL TOXICOLOGY, MICHIGAN STATE UNIVERSITY

REPORT FROM THE FORUM OF SCIENTISTS: REAUTHORIZATION OF THE CLEAN WATER ACT

[NOTE: The following has been excerpted from the above named report. The report, in its entirety, has been retained in committee files.]

Introduction

The SAB report entitled *Reducing Risk* submitted to the USEPA in November 1990, identified several ecological risks that deserved equal attention to those dealing with public health. As a follow up, I was asked to assemble a group of scientists to explore how the reauthorization of the 1972 Clean Water Act could be used to address these remaining environmental problems that are critical to the long-term economic, ecological and human health components of our quality of life. In particular, we were asked to identify and rank the most important environmental risks associated with our aquatic ecosystems. Furthermore, specific suggestions were made as to how these scientists would address these problems. The analyses and recommendations of our group will now be reviewed by comparable groups of economists and lawyers. These deliberations will then be used by the USEPA as they develop their strategy for the reauthorization in 1992.

The members of the Forum are given in Table I. We met for 1 and 1/2 days at Michigan State University in late February 1991. The report is organized in four sections:

- I. General Comments: Generic issues that are not pollutant or program specific.
- II. Nutrients and Hazardous Chemicals: Specific pollutants and institutional responses.
- III. Habitat Loss and Species: Basic concepts and priority problems.
- IV. Infrastructure and Institutions: Generic problems associated with federal institutions.

We only had time to focus on those residual risks that we thought to be high-high, medium-high and low-high. There are many risks that we considered low similar to those in the SAB report. These were not discussed in detail.

Generally, the feeling was the Clean Water Act of 1972 has done a very good job of protecting our water resources for those issues that were of primary interest in the 1970s. Combined sewer overflows and many persistent toxics remain priority problems. Nutrient loading of nitrate, phosphate and organic matter of marine estuaries are potentially a very big problem. Other significant risks still exist because the source of the stress was not addressed or was explicitly exempted from the initial act. Agricultural policies and practices, habitat destruction and the introduction of exotic species are the most important new issues that must be incorporated into the reauthorization. The detailed rankings, the logic for the rankings, and the recommendations for reducing risk are all included in the individual sections.

I. General Comments:

The Clean Water Act (CWA) must recognize the dependency of *sustainable* economic development and public health on self sustaining aquatic ecosystems. The CWA must be broadened to incorporate ecological as well as public health dimensions.

Also, the preamble to the CWA should provide the reader with the clear understanding that "human health related to drinking water quality must be protected under the CWA. The CWA must provide the same status for drinking water protection as it does for protection and propagation of fish, shellfish, wildlife, and recreation. The risks to public health from failing to deal with drainage and human pathogen loading resulting from agriculture, inadequately treated sewage and, in some cases, stormwater runoff are significant, documented, and thus deserves equal ranking with the above issues.

It should also be stated in the CWA that the Safe Drinking Water Act emphasizes source water protection and encourages water purveyors to use supplies from the highest quality source. The CWA must recognize the human health benefits associated with procuring such high quality supplies and that such procurement may result in impacts to wildlife habitat. There must be a mechanism to mitigate those impacts that is clear, consistent and enforceable, and allows for the rational protection of drinking water supplies.

Issue: Act title and goals do not encompass critical problem areas.

Problems and Risks: The perspective and orientation of those administering the Clean Water Act is established in large measure by the Act's title and goals. At present, the Act doesn't encompass physical alteration of habitat and other significant ecological issues.

Solutions: Retitle the Act along the lines of "Aquatic Resources Protection Act" or "Clean and Habitable Water resources Act" or "Watersheds, Oceans, and Wetlands" Act.

Establishment of an Advisory Committee, perhaps under the EPA Science Advisory Board, would provide a mechanism to introduce state-of-the-art concepts and technologies that can guide future amendments to the CWA. The group could consist of twenty scientists, engineers, economists, lawyers, and sociologists, all of whom have contributions to the maintenance and improvement of water quality.

An annual report on the state of water quality should be prepared and published for the public. If introduced to the public initially through the communications media, such a report could initiate and maintain an awareness of concerns about the most important commodity regulated by EPA.

Issue: Scientific review of toxic pollutants and hazardous substances.

Problems and Risks: presently a list of Toxic ("priority") Pollutants (Section 307) forms the basis for setting effluent limitations and levels of Best Available Treatment Technology Economically Achievable (BACTEA). Originally developed by the House Committee on Public Works and Transportation (Committee Print No. 95-30), the list has never been subject to scientific peer review and has remained imperfect and unprioritized. Similarly, the list of Hazardous Substances (Section 311) that designates discharge limitations has never received adequate review. The background data that were used to justify listing have been criticized for inconsistencies but have not been revised. Neither list has been substantially refined since their creation. This causes a misapplication of the Nation's resources for monitoring and treatment inasmuch as resources that could be applied to high-risk problems are now applied to many problems that pose negligible risk. Also, no provision exists for adding new, scientific identified pollutants that are judged to have a reasonable chance of causing problems.

Solutions: Reauthorization of the Clean Water Act offers an opportunity to rectify the shortcomings of ambiguous and scientifically unjustified listings. Although the EPA Administrator has always had authority to revise the Toxic Pollutant list upon reviewing toxicity, persistence, degradability, and effect, revisions have only rarely been made. Some present listings are either environmentally insignificant, analytically ambiguous, or have never been commercially produced or quantitatively detected.

Sections 307 and 311 listings should be opened to public review, comment, and change; deletions or additions should be based on consensus scientific peer review. Environmental issues should address multimedia concerns, but avoid indiscriminate transfers of lists that were developed for other purposes and lack scientific review.

Issue: Adequate Federal Funding

Problems and Risks: Vital water quality protection programs mandated by the CWA will not be achieved without adequate federal funding to finance resultant increases in state program costs.

The 1987 amendments to the CWA established several new federal mandates for water quality protection. Examples include (1) identification of waters that are impacted by toxics and establishing clean-up strategies; (2) issuing storm water discharge permits for many different discharges; (3) establishing enforceable numerical water quality criteria for state waters; and (4) addressing non-point sources of pollution. EPA has focused increased attention on combined sewer overflows. These amendments have greatly increased permit requirements to include sludge, storm water, and toxic controls and have increased the monetary costs of implementation.

These new federal mandates are important initiatives and must be pursued if the surface waters in the U.S. are to be protected. Federal funding to assist states in this effort, however, is decreasing. For example, the 1987 amendments terminated the construction grants program and replaced it with the State Revolving Fund (SRF) program that provides low-interest loans to municipalities. But, the federal support for the loan program is short term, and starting in 1992, it will decline to zero federal involvement after 1994.

Federal program support has also decreased. For example, a 4% set-aside of the \$100 million/year construction grant allotment was previously authorized for state water program support. These funds are no longer available.

Although federal support for state programs under Section 106 increased slightly in 1991, it is still seriously inadequate to address increasing program demands.

Solutions: The federal government must increase its participation in funding the new water quality protection programs that are mandated by federal law.

1. The new Act should maintain the federal participation in the SRF at the 1991 level (authorized at \$2.4 billion nationwide).
2. The state program grants under Section 106 of the Act must be enhanced to provide necessary federal support for major new federal programs such as the storm water permitting, sludge management programs, and modernized waste water discharge criteria to the marine environment.
3. Non-point sources of pollution remain as a persistent problem that impacts surface waters. Section 319 of the Act provides federal funding for non-point source demonstration projects (\$70 million for FY 88, \$100 million per year for both FY 89 and FY 90, and \$130 million for FY 91). Federal appropriations, however, were not made during the first two years of this authorization. Continued funding for a true four-year period, as envisioned in the 1987 amendments, is needed to adequately demonstrate available and effective non-point source management practices.
4. Consideration should be given to creation of a Federal Aquafund similar to Superfund. The Aquafund would provide federal funds targeted for cleanup of critical, high-risk areas of contamination in the nation's surface waters systems. It is appropriate for corporations that produce the materials that create these in-place pollutant problems to bear the cost of long-term remediation and scientific research.

Issue: Long-term Research Investment

Problems and Risks: As our ability to detect toxic, persistent chemicals at very low levels continues to improve, we are beginning to find chemicals almost everywhere in the aquatic environment. Understandably, this heightens public concern and can lead to the perception that all trace contaminants pose serious health threats. However, any such threats must be evaluated scientifically, not emotionally. The mere presence of toxic chemicals, or even evidence of their uptake by organisms, does not automatically signify that biological impact is occurring. Conversely, neither does the absence of obvious problems constitute proof that the chemicals are harmless. They could be exerting small, cumulative effects which may take a long

time to become manifest yet are profound. Confounding this problem is the large discrepancy between our technical ability to analyze chemicals, which is quite sophisticated, and our scientific understanding of their impacts, which is rather naive. What is needed is the ability to link the presence of contaminants in the environment and their bioaccumulation in organisms (or their conversion products) to the resulting biological effects. state-of-the-art research, which is now addressing this critically important area must be encouraged and used by decision makers if sound judgments are to be made on the relative dangers of different complex mixtures of chemicals in our environment.

Cases of pollution caused biological effects have only been documented in highly contaminated areas. Highly contaminated sites are relatively rare, and represent worst-case situations that are largely beyond repair. Of equal concern should be the greater number of sites that exhibit low-to-moderate levels of contamination where remediation or restoration would be feasible. Such conditions might be causing adverse effects that are too subtle to detect and yet they represent the majority of sites. Such subtle effects, which have so far been overlooked, may lead to devastating consequences.

Finally, the present version of the CWA is based, in part, on outdated science and includes inadequately reviewed information. For example the Act's list of Toxic "priority" Pollutants (Section 307) was neither subjected to scientific peer review initially, nor has it been substantially refined since then. Yet, in the intervening years, published research studies have indicated changes in the status of many chemicals of concern (e.g., concern has increased for organometals and coplanar PCBs, while concern has diminished for ODT). Similarly, even though important new findings or techniques have been developed over the last few years, they have often not been adopted by those enforcing the CWA. Biochemical studies, for example, have revealed that it is not useful to measure certain contaminants (e.g., aromatic hydrocarbons) in certain tissues of some species because they have been bioconverted into other compounds. Rather than continuing to expend resources looking for something that won't be found, emphasis should be placed on developing ways of measuring the conversion products (metabolites). In other cases, a new methodology may be available, such as a rapid way to screen fish bile for exposure to aromatic hydrocarbons, yet those enforcing the law are resistant to change and persist in using more time-consuming, costly, and outdated techniques.

Solutions: Prior to taking remediation or restoration steps, we need to develop a scientifically sound information base that relates the extent and duration of chemical exposure in various key species to significant biological effects. A suite of indices needs to be developed for assessing small alterations in biological processes, such as reproduction or growth. Actions taken without adequate information will lead only to stop-gap measures and can result in multi million dollar mistakes.

A significant portion of federal funds in the reauthorization act should be targeted for development of a better understanding of chemically-induced alterations in vital biological processes in aquatic species, particularly development of indices to measure contaminant exposure and effects.

The reauthorized CWA should establish a strong, long-term commitment in development of the necessary scientific information base.

Present regulatory and monitoring efforts do not allow flexibility for adoption of newly developed indices. A concerted effort must be directed toward scientific evaluation of newly developed tests and implementation, where appropriate, into existing programs.

The CWA should be amended to include the impacts of contaminant and nutrient loadings on habitat. Regulations must be added to try to prevent such toxic inputs.

Issue: Ecosystem Quality of the North American Great Lakes (Section 118, Great Lakes)

Problems and Risks: Nutrient inputs to the Great Lakes from non-point sources cause increased primary productivity and eutrophication. Toxic chemical input to the Great Lakes, primarily from non-point sources (atmospheric deposition, in-place pollutants) degrades water quality, impacts the food web, affects the biological functioning of higher organisms, presents increased risk to consumers of chemical-laden fish (e.g. birds; humans) and adversely impacts the commercial and recreational economy. In place contaminants in sediments can degrade the benthic food web and remain as sources of contaminants to the water column for decades and even centuries. Short range and long range atmospheric transport and deposition of toxic chemicals remains a significant hazard to the water quality.

The Great Lakes are a valuable national resource that need to be protected for future generations. With the availability of high quality water decreasing and with

pressures from climate change, ozone depletion, urbanization, and wetland alteration increasing, proper stewardship of the ecosystem is demanded.

Solutions: The US should actively pursue the goals and objectives of the Great Lakes Water Quality Agreement of 1978 as amended in 1987. The EPA, through its Great Lakes National Program Office (GLNPO), should vigorously lead the monitoring, surveillance, research, and development of solutions to the problems of in-place pollutants, release of exotic organisms (e.g., sea lamprey; Zebra mussel; alewife), eutrophication, and toxic chemicals. This must be done in collaboration with relevant Canadian agencies, and all the relevant states. The EPA and the GLNPO must be held to increased accountability for mandated programs through the 1990 Clean Air Act, the 1987 Clean Water Act, and the Great Lakes Water Quality Agreement and Amendments of 1987. Although monitoring and surveillance of toxic substances is mandated, little has been accomplished. Research in support of the Clean Water Act and Clean Air Act goals has been minuscule. The GLNPO/EPA should work in concert with the Great Lakes Environmental Research Laboratory of NOAA and with sponsored research programs to university researchers to answer important questions.

Issue: Determination of the impact of man-induced environmental changes on living resources (Section 117, Chesapeake Bay)

Problems and Risks: The coastal zone receives hazardous chemicals from numerous point and non-point sources. Many of these substances sorb to sediments and are either transported or stored where sediments accumulate. Since materials from many sources may settle at the same location, sediments are usually contaminated with a wide variety of chemicals. Flora and fauna that reside near to the "contaminated sinks" may be exposed to a complex mixture of hazardous materials.

Existing regulations controlling aquatic chemical pollution usually focus on single chemicals, e.g. water quality criteria or sediment quality, and do not consider the biological response to combined chemical insult. Moreover, biological surveys usually employ methods that are insensitive to subtle changes and fail to detect injury until major changes in abundance or species composition have occurred. Therefore, the impact of anthropogenic chemicals on the Nation's marine and estuarine biota is not being adequately addressed.

Solution: A directed research program should be initiated to determine and utilize new and novel monitoring techniques and endpoints in order to assess the impacts of chemical pollution on the biota of the coastal ocean. These should include, but not be limited to, biomarkers (biochemical, physiological or histological markers of stress), sediment bioassays and detailed analytical chemistry designed to quantify and track as many anthropogenic substances as technically feasible.

Issue: Lack of coordination between monitoring and modeling (Section 320, National Estuarine Program).

Problems and Risks: Monitoring is an inherently expensive activity in terms of time, personnel and equipment. The uses of monitoring data are frequently not well defined and much of it is simply filed away and disappears.

When modelers try to parametrize or validate models using monitoring data, frequently such data cannot, for various reasons, be adjusted to the requirements of the model. There is often a fundamental mismatch between how modelers view a system (conceptionally, analytically, integratively, etc.) and how the designers of monitoring programs perceive it (standard variables, off-the-shelf methods, inadequate spatial and temporal sampling design, inattention to issues of scale and resolution).

Solutions: Appropriations should be identified to support interactive modeling and monitoring programs. Monitoring and modeling efforts should be designed in concert. Modeling should precede monitoring and then the monitoring defined relative to the models. *The modeling-monitoring feedback linkages should be forged interactively.* The models can then be used to aid assessments that monitoring programs were established to perform. As the programs proceed, both models and monitoring should be adjusted to optimize responsiveness to the requirements of the problem.

Issue: Insufficient technical support and regulatory mandate for water quality standards adoption (Section 320, National Estuarine Program).

Problems and Risks: Although the CWA emphasized the use of water quality criteria, issues of inconsistency between states and an overall deficiency of criteria prevails. Chemical-specific regulation of toxics, nutrients and other conventional pollutants is entirely dependent on water quality standards. Without these numerical limits being specified in discharge permits, many substances that can impact the aquatic environment continue to be released.

Solutions: Through the CWA, specific resources should be authorized to support EPA ORD activities designed to develop or obtain from the academic community the

toxicity data necessary for water quality criteria development. EPA should be required to expand water quality criteria development for compounds beyond those on the present priority pollutant list.

Issue: Definition of "real" risks of toxic chemicals.

Problems and Risks: As our ability to detect toxic, persistent chemicals at very low levels (PPB, PPT, PPQ, etc.) increases, chemicals are being detected almost everywhere in the aquatic environment. This heightens the public's anxiety about environmental protection. However, at the present we are able to measure only a few so-called "eleventh hour" effects that seem to occur only in highly contaminated areas. This results in controversy about the potential impact of contaminant loading in the aquatic environment. The unfortunate outcomes are confusion and loss of credibility. At present, therefore, most regulatory, remedial and environmental restoration efforts are initiated primarily because of public pressure and are not based on appropriate scientific information; consequently they are often open to criticism and controversy. In short, the mere presence of toxic chemicals or even documented uptake of organics does not signify that biological impact is occurring. Currently information is urgently needed to relate the extent and duration of exposure to significant biological effects.

Solutions: Prior to any implementation of remedial action program, a series of indices need to be developed that measure alteration in normal biological processes necessary for proper functioning of important components (critical individual organisms) of the ecosystem. These indices (bioindicators or biomarkers) should be chosen so their alterations can be clearly linked to contaminant exposure or body burdens in key organisms and to vital biological processes (reproduction, disease resistance, health). A suite of such bioindicators (exposure, sublethal responses, effects) must be developed to provide better management decisions. Such methods are being developed in many laboratories; however, the efforts are often fragmentary, because of limited funding and long-term direction. Certain federal funds in the reauthorization act should be devoted to a concerted and holistic effort to develop such an information base. Actions taken without a proper information base will lead only to stop-gap measures and often result in multimillion dollar errors.

The language of the CWA should be modified to provide a strong and long-term commitment in support of research on how and at what level complex mixtures of contaminants produce sublethal effects that may be harbingers of long-term deleterious impact. This effort will probably take several decades to complete.

Issue: Insufficient funding for research related to integrated ecosystem assessment.

Problems and Risks: A jurisdictional gap exists in the support for basic research related to environmentally relevant problems. Most state agencies and the EPA fund only work that is directly related to specific (usually monitoring) questions. Government institutions (e.g., NSF, NIH, NIEHS), on the other hand, are only able to fund extremely basic work directly related to human health. This funding gap has severely hampered acquisition of the information needed for integrated ecosystem risk assessment.

Solutions: Additional (new) sources of funding probably within EPA should be devoted to exploratory research. This work should be conducted by federal research laboratories (e.g., NOAA, EPA, DOE) as well as the academic research community, since diversity of scientists brings in different and valuable perspectives to the issues.

Issue: Development of appropriate data to assess ecosystem health.

Problems and Risks: The 1987 amendments to the CWA and the SAB reports stress the need for integrated ecosystem risk assessment to protect the health of our aquatic resources. Although some of the techniques needed for this process are already available, others need to be developed. Such measures should at a minimum assess: 1) the fate, persistence and availability of contaminants; 2) contaminant exposure in target organisms; 3) mechanisms of action of toxics; 4) reproduction and population fitness; and 5) ecosystem structure and functioning.

Solutions: Funding should be devoted to developing new approaches to assessing ecosystem health and risk, and the ecological risk community should reach consensus regarding the best approach.

Issue: Regulation of metals by the water quality standards program.

Problems and Risks: The EPA develops water quality criteria which, if not exceeded, will be protective of beneficial uses of the aquatic environment. The criteria for metals are expressed in terms of the dissolved, or "acid soluble", form of the metal. EPA interprets existing regulations as requiring NPDES permit limits on metals to be expressed as total or total recoverable metal. The use of the total measurement for a metal does not recognize that insoluble, complex metals are probably not bio-

logically available and, therefore, not capable of exerting a toxic effect in an exposed organism. This limits the utility of conducting site-specific re-calculations of water quality criteria to account for water quality effects on bioavailability. Significant amounts of any particular metal can occur in the non-dissolved form in an effluent discharge, and regulating by the total form will result in over-conservative control and the misuse of wastewater treatment resources. Long range availability through in-situ volatility, however, must also be considered.

Solutions: Clarify existing language in the CWA to direct that regulatory controls (i.e. effluent limits) be expressed in a form consistent with the underlying water quality criteria. The EPA must also complete and promulgate analytical protocols for the routine determination of acid-soluble metals, and revise existing regulations to allow the acid-soluble expression in permit limits.

Issue: Site specific water quality criteria/standards

Problems and Risks: Water quality criteria and standards must continue to accommodate site-specific conditions which may render a substance less toxic. Examples include complexation or chelation of trace metals which render that fraction relatively non-biologically available or toxic. A case in point may be "complexed" copper and cadmium in marine waters being less "toxic" than the free ion activity.

Recommendations: EPA should encourage and support development of protocols to establish site specific water quality criteria or standards. Regulations for domestic wastewater effluents should be based on the assimilation capacity of the receiving waters. Permits should limit mass loadings per unit time and not specify effluent concentrations or treatment technologies. In the absence of scientifically derived assimilation capacities, BAT limitations should be used.

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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 WASHINGTON, DC 20510-6175

October 12, 1993

Dr. William Cooper
 Institute for Environmental Toxicology
 Michigan State University
 C 231 Holden Hall
 East Lansing, Michigan 48824

Dear Dr. Cooper:

The Subcommittee appreciates your participation in the hearings of the Subcommittee on Clean Water, Fisheries and Wildlife in its review of the Clean Water Act. In furtherance of our review, we have a few follow-up questions for the record. Please provide your answers to Bill Leary at 505 Hart Senate Office Building, Washington, D.C. 20510 by October 29, 1993.

- ✓ 1. Can you expand on your comments about the need for peer review? What has been the affect, if any, of not providing peer review under the Clean Water Act? Could you describe what, in your opinion, would be an appropriate and adequate peer review process and the kind of contribution that it would make?
2. A 1988 Agricultural Department study questioned the current ability to identify a direct link between agricultural "discharge" and the water quality of receiving streams. For example, it says: "Offsite damage associated with water pollution cannot be measured directly and links between farming and affected water uses are not well defined. Many assumptions are made to estimate offsite damage, and both methods and data for estimating damage need to be improved." Bradley M. Crowder, Marc O. Ribaudo, and Edwin Young, "Agriculture and Water Quality," Washington: USDA, August 1988, p. 2.

For example, I understand that in one research study of phosphorus loading and nonpoint source pollution in Estonia, the authors concluded that phosphorus stream loadings from intense agricultural operations are quite low, in spite of the fact that phosphorus loadings are high in the fields. The field-generated phosphorus combines with the sediment to prevent stream damage. whereas phosphorus loadings from industrial and municipal sources are highly interactive. E. Loigu, "Evolution of the Impact of Non-point Source Pollution on the Chemical Composition of Water in Small Streams and Measures for the Enhancement of Water Quality," Advances in Water Pollution Control, H. Laikari, ed., 1989, pp. 213-217.

Have we made any progress in establishing a direct link between what happens in a farmer's field and what occurs to the water quality of streams and waters?

- ✓ 3. In looking at pollution prevention as a toll for improving water quality, it is conceivable that in our zeal for pollution prevention, we can and will identify ways to place controls on the front end without necessarily improving water quality, or being able to document scientifically a relationship between the pollution prevention effort and an improvement in stream quality. What recommendations would you make to this committee about the construction of a pollution prevention program to assure that pollution prevention does not become the end itself, but rather that those pollution prevention efforts undertaken will have a measurable and protective effect on water quality?
- ✓ 4. In your report to EPA, you state that restrictions on agricultural and silvicultural practices should be included in any federal program for nonpoint source pollution control. What restrictions did your team have in mind?

Sincerely,

Bob Graham
Chairman
Subcommittee on Clean Water,
Fisheries and Wildlife



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November 2, 1993

Mr. Bill Leary
505 Hart Senate Office Building
Washington, DC 20510

Dear Bill:

I was amazed that someone would use a 1988 phosphorus study from Estonia to claim there is no measurable linkage between farming and water quality. I have enclosed three folders of material that I pulled together in just a few days.* The first contains photographs and enforcement actions on agricultural activities in Michigan. These are just a small sample of the more recent enforcement actions. The pictures speak for themselves.

The second folder addresses question two in Senator Bob Graham's letter of October 12, 1993. It contains a collection of articles on agricultural and forestry impacts on aquatic ecosystems. I can produce several hundred more if you need them. In particular, the GAO 1990 (not included) and the NRC 1992 summary reports are very credible.

The third folder contains materials related to question four. Senator Graham asked specifically about recommendations for non-point source pollution control. The specific recommendations are supported by the remaining articles in the folder.

I will attempt to answer questions one and three. The issue of peer review involves the scientific credibility of the regulatory procedures and standards. The water quality standards are often set during times of crisis (Agent Orange, dioxin) and we are forced to use whatever data we have at the time. Generally, the scientific understanding of the toxicant and the mechanism of action comes at some later time. These standards are supposed to undergo a peer review every five years. They almost never do. The "anti-backsliding" provision in the G.L.I. actually prohibits one from relaxing the standard even when new data indicates that it is unnecessarily restrictive.

*The folders referred to have been retained in committee files.



EPA is currently developing new risk assessment models based on mechanisms of transport, fate and effects. These models are being reviewed by the U.S. EPA Science Advisory Board. This process is currently working and should be included in the new Clean Water Act.

The pollution prevention program is justifiable in two ways. Significant pollution is always less expensive to prevent than to remediate after the fact. Case studies have shown that residuals (wastes) that are recycled, reprocessed or reused become resources (inputs) that also save money in the long run.

The characteristics of toxicants (materials) that need to be proactively prevented from being discharged are those that are persistent, are mobile in the environment, bioaccumulate in the ecological food chains, and are chronically toxic in effects. These include the heavy metals and some industrial and agricultural organic compounds. Radionuclides will also fall into those categories. We can demonstrate "bang-for-your-buck" risk reduction with these types of residuals.

I hope these materials are helpful. If you need anymore assistance, please give me a call.

Respectfully yours,



William E. Cooper, Ph.D.
Professor

STATEMENT OF ROBERT J. HUGGETT, PROFESSOR OF MARINE SCIENCE,
COLLEGE OF WILLIAM AND MARY

My name is Robert Huggett and I am a Professor of Marine Science in the School of Marine Science at The College of William and Mary. I am also Chairman of the Department of Environmental Science of the Colleges' Virginia Institute of Marine Science. I have recently been involved with a committee of The Water Science and Technology Board of the National Research Council (NRC) that has been studying ways to more efficiently manage wastewater entering our coastal environment. The result of that effort, **MANAGING WASTEWATER IN COASTAL URBAN AREAS**, has just been released. I would like to take this opportunity to present some of the findings and recommendations contained in the report.

More than a third of all Americans live along a coast, usually in urban areas. Every day, more than 1,400 wastewater treatment plants in U.S. coastal cities discharge 10 billion gallons of treated effluent. Annual treatment costs are between \$1.1 billion and \$1.8 billion. Another 11.3 billion gallons of treated industrial wastewater and spent cooling water is discharged by approximately 1,300 industrial facilities.

In addition, non-point sources of pollution, including urban and agricultural runoff, are a growing problem. Pollution can also come from outside the coastal region—from towns, farms and factories adjacent to rivers flowing to the coast. There are other human activities that can effect coastal marine systems. For example, increased irrigation by farmers can reduce the amount of freshwater flowing into estuaries and over fishing can alter the ecological balance in marine waters.

Current wastewater and stormwater management policies are rooted in the 1972 amendments to the Federal Water Pollution Control Act, reauthorized in 1977 and 1987 as the Clean Water Act. The 1972 legislation asserted authority over the quality of navigable waters such as rivers, lakes and coastal waters. It required establishment of uniform minimum standards for municipal and industrial wastewater treatment, set strict deadlines for compliance, and provided federal funds to help pay for newly required projects.

Under the statute, efforts to protect coastal water quality have focused mainly on regulating city sewer systems and other single-point sources of pollution such as industrial plants. This approach has produced rapid and effective improvements in water quality in many areas, particularly lakes and rivers. However, the law's uniform requirements have not allowed a process that adequately addresses regional variations in environmental systems around the country, or that respond well to changing needs, improved science and more complete information.

To more effectively protect coastal waters from pollution, the nation must begin moving towards a more flexible integrated management approach that takes into account the full range of factors that affect coastal pollution and efforts to control it. The recently released NRC report recommended a more comprehensive approach to managing coastal waters called, "Integrated Coastal Management" (ICM). Broadly speaking, ICM aims to protect by coastal ecosystems while recognizing the importance of human activities, the report says, ". . . the federal role in integrated coastal management shifts from that of prescriptive mandates to a partnership with regional authorities in developing a management system that meets coastal-quality objectives.

The authors of ICM suggest several modifications to the Clean Water Act and the Coastal Zone Management Act, including establishing a "National Coastal Quality Program" as a supplement to the National Estuaries Program. The coastal program should include an integrated planning and permitting process, as well as an "Integrative Action Plan" to supplant Comprehensive Conservation and Management Plans.

The study identifies several key issues that both planner and legislators must consider when thinking about wastewater management. Many of these issues are not effectively addressed by current clean water strategies and point to the need for an integration of functions among many agencies including storm and wastewater agencies, water supply agencies and agricultural agencies.

Treatment Levels. The cost and complexity of treatment are major factors that can vary greatly from area to area. Regional environmental and health concerns also vary. Wastewater treatment levels and related management concerns need to be guided by water quality needs rather than by technology-based regulations.

Excess Nutrient Enrichment. Nitrogen and phosphorus, from both point and non-point sources can deplete dissolved oxygen, resulting in fish kills, algal blooms, and other environmental problems. Secondary treatment of wastewater does not remove significant amounts of nitrogen.

Source Control. These efforts can supplement treatment, avoiding problems before they occur. Source control of pollutants, which is an effective tool for managing both point and diffuse pollution sources, should be strongly encouraged by incentives and regulation. In some cases, for example, tactics such as erosion control may be more effective and cheaper than wastewater treatment of reducing the particulate level of waters flowing into a coastal region.

Stormwater and Combined Sewer Overflows. In many cities, combined collection systems that carry both stormwater and city sewage may overflow. Building new facilities, however, is expensive, and conclusive scientific data on the overflow problem is lacking. Without more research, proposals to legislate technology-based requirements for systems are likely to fail.

Evaluation and Feedback. Management plans must be flexible enough to allow for changes and improvements.

Our ability to manage wastewater in coastal areas has improved greatly over the past decade because of advances in science and engineering. The authors of *Managing Wastewater in Coastal Urban Areas* believe that the concepts set forth in "Integrated Coastal Management" take advantage of our more advanced and creative technical capabilities and offer a better way to both use and protect our coastal environment.

WRITTEN TESTIMONY OF RICHARD A. CONWAY, SENIOR CORPORATE
FELLOW, UNION CARBIDE CORPORATION

Mr. Chairman and members of the Subcommittee:

Good morning. My name is Richard Conway. I am a Senior Corporate Fellow for Union Carbide Corporation. I am appearing today to discuss some issues I feel are important in the context of Clean Water Act reauthorization. These views reflect my technical experience both at Union Carbide and in professional service largely on EPA's Science Advisory Board and on several National Academy of Sciences committees, boards, and commissions. My role at Union Carbide is one of a skill center manager and technical consultant. I speak from that perspective, rather than as a regulatory specialist.

Union Carbide is a worldwide producer and marketer of commodity and specialty chemicals and plastics, employing twelve thousand people in the U.S. Its principal domestic manufacturing facilities are in Louisiana, New Jersey, Texas and West Virginia. More than 25 percent of Union Carbide's revenues are from product exports and licensing of technology in foreign countries.

I. INTRODUCTION

As part of its environmental vision, Union Carbide has publicly committed to reductions in emissions, releases and generation of wastes. Our commitments include the elimination of releases of known and suspect human carcinogens, and the control of the discharge of potentially harmful chemicals to surface water so that concentrations in the receiving stream are substantially lower than any level known to cause adverse health or environmental effects. These serve as important incentives to achieve continuous improvement in our overall environmental performance.

In pursuit of this vision Union Carbide has made significant progress in reducing emissions, discharges and releases to all media, including water. Following is a summary of our accomplishments in reducing water pollution:

SINCE 1987, UNION CARBIDE HAS REDUCED THE RELEASE OF SARA SECTION 313 CHEMICALS TO ALL MEDIA BY 41 PERCENT.

This figure includes a 65 percent reduction in discharges to publicly owned treatment works (POTW's). Union Carbide is committed to achieving a 57 percent reduction in SARA 313 releases to surface waters from 1987 levels by 1996.

FROM 1987 THROUGH 1991, UNION CARBIDE HAS REDUCED ITS EMISSIONS AND RELEASES OF KNOWN AND SUSPECT CARCINOGENS TO SURFACE WATER AND POTW'S BY 90 PERCENT.

An active pollution prevention program relies on an Environmental Management hierarchy of source reduction, recycling, energy recovery, treatment and as a last resort, land disposal to achieve its waste and risk reduction objectives. Goals are set by senior management, are made public, and the corporation reports its progress periodically to the public. Pollution prevention methods employed by Union Carbide

often include raw material substitution, recycling, leak detection and repair, energy recovery, and improved housekeeping.

REDUCTION OF WASTEWATER IS AN IMPORTANT ATTRIBUTE OF OUR KEY PROCESS TECHNOLOGIES, PROVIDING SIGNIFICANT ADVANTAGES TO OUR CUSTOMERS AND THE ENVIRONMENT.

Here are a few examples of Union Carbide products and technologies that help us and others protect water quality:

UNIPOL® Polyethylene and Polypropylene: Products such as plastic milk jugs, food wraps, construction materials, landfill and irrigation liners, and wire and cable insulation are made with this proprietary plastics technology. The UNIPOL® process uses one-third of the energy of conventional high pressure processes, and produces virtually no solid or liquid waste. Both attributes, coupled with superior product performance, are responsible for UNIPOL® technology being licensed around the world, accounting for about 25 percent of world polyethylene production capacity. Compared to conventional high pressure, solvent-based technology, UNIPOL® reduces the discharges to air and water over 97 percent.

Low Pressure Oxo (LPO) Process for Manufacturing Oxo Chemicals (butyraldehyde, propionaldehyde, and valeraldehyde—intermediates for butanol, 2-ethyl hexanol, n-propanol, and valeric acid)

Union Carbide's (LPO) process greatly reduces discharges to wastewater when compared to high pressure processes—LPO discharges to wastewater have over 90% less organics and no heavy metals. High pressure processes, which Union Carbide stopped using in 1983, discharge cobalt as well as organics.

LPO is benefiting the environment world-wide. In part because of its superior environmental attributes, LPO technology licensed by Union Carbide is used for approximately 50% of world-wide oxo chemical production. The latest generation oxo process facility, being built at our Taft, LA plant, is designed to exceed the environmental performance of its predecessors.

CANSOLV® FLUE GAS DESULFURIZATION PROCESS: This innovative technology recovers sulfur dioxide from power plants and industrial processes and can produce sulfuric acid, a marketable commodity. This process consumes about one-third of the energy of a conventional scrubber, and cuts solid waste generation requiring landfilling by over 90 percent. By use of a regenerable solvent in-lieu of a water/calcium hydroxide solution, there is less use of water and therefore less water discharge as a result of scrubbing the SO₂.

INDUSTRY HAS MADE SIGNIFICANT PROGRESS IN REDUCING RELEASES OF TOXICS TO SURFACE WATERS

Industry has made remarkable progress in reducing releases of toxics to our nation's surface waters. According to data reported under EPA's Toxic Release Inventory, member companies of the Chemical Manufacturers Association reduced direct releases to surface waters by 77 percent between 1987 and 1991. Transfers to publicly owned treatment works were reduced by 31 percent.

Further evidence of the progress made by industry in reducing discharges of toxics is found in EPA's National Water Quality Inventory, which is reported to Congress every 2 years. In the 1988 inventory, EPA found that less than 15 percent of the remaining water quality problems were attributed to industrial discharges. Two years later EPA reported that less than 10 percent of the remaining water quality problems were attributed to industrial discharges.

Progress to date indicates that the Clean Water Act has been very effective in reducing industrial discharges. The trend revealed by these data suggest that existing requirements are effecting continuing improvements and that more controls on industrial discharges are not needed.

Congress should focus its reauthorization efforts on the significant remaining water quality problems. We believe that additional regulatory controls on industrial point source discharges at this time would produce little if any significant environmental benefit.

WE ARE COED TO A PROCESS OF CONTINUOUS IMPROVEMENT IN SURFACE WATER AND GROUNDWATER QUALITY.

Union Carbide is committed to a process of continuous improvement in environmental performance. Living up to Union Carbide's corporate value of safety and environmental excellence, and working with the Chemical Manufacturers Association to

implement its Responsible Care® initiative, remain top priorities involving costs and commitments that must be factored into all plans and strategies.

Safety and environmental excellence is one of the company's five core values. A comprehensive and efficient management system embodying the traditional management principles of planning, organizing, leading and controlling assures the success of this corporate value. This management system includes plans or standards for surface water and ground water which have as a basic requirement "*Programs must exist and provide reasonable assurance that Union Carbide locations do not have an adverse effect on space waters and ground water.*"

The management systems control element is an independent environmental audit function headed by a Corporate Vice President who reports directly to the Chief Executive Officer. Over the past six years, over 1000 environmental, health, safety and product responsibility audits have been conducted in more than 500 facilities in 31 countries. Historical performance is quantified and monitored, and results are analyzed and reported periodically to top management and the Health, Safety and Environmental Affairs Committee of the Board of Directors of the Corporation.

We are committed to a process of continuous improvement of environmental performance including surface water and ground water issues which are systematically evaluated and monitored. Corrective action plans are prepared for identified deficiencies and the plans are tracked and implementation assured. Subsequent audits confirm the implementation of the plans and assure the deficiency is corrected.

II. THE STATE OF THE NATION'S WATER

THE EXISTING CLEAN WATER ACT HAS SUCCEEDED IN IMPROVING WATER QUALITY. RECENT AND IMMINENT REGULATIONS PROMULGATED UNDER THE EXISTING ACT WILL REQUIRE FURTHER REDUCTIONS IN POINT SOURCE DISCHARGES. ADDITIONAL CONTROLS ON POINT SOURCE DISCHARGES ARE NOT WARRANTED.

The Kanawha River in West Virginia was once considered one of the most polluted rivers in the nation. The lower Kanawha River Basin receives discharges from municipalities, organic chemical, and pesticide manufacturing plants. Union Carbide process wastewater is treated and discharged from two outfalls on the Kanawha River.

The Clean Water Act instituted the NPDES permit program. In the 1970's and early 1980's the industrial permits were written on the basis of best professional judgment, since comprehensive effluent guidelines were unavailable. Industries and municipalities have steadily upgraded their treatment systems to meet these NPDES permit requirements.

The NPDES program has greatly benefited the Kanawha River. In 1985, The West Virginia Department of Natural Resources (DNR) and the United States Department of Agriculture issued a "Comprehensive Survey of the Lower Kanawha River Basin" which noted "a significant decline in organic pollution in the Kanawha River," and cited DNR fishery population studies that showed "both increased fish species diversity as well as greater total populations". The study concluded that "the existing toxic waste control system appears to be adequate at this time."

Although the Kanawha is greatly improved, regulations required by the existing Clean Water Act will require further reductions in discharges. In 1987, effluent guidelines for the Organic Chemicals, Plastics, and Synthetic Fibers (OCPSF) Point Source Category were promulgated, and pesticides effluent guidelines will be promulgated in the near future. The OCPSF and pesticide guidelines will result in further reductions of toxic chemicals discharges. No further legislation restricting point source discharges of toxic pollutants is warranted at present. Until we observe the effects of implementing this next range of regulations. We need to assess our priorities on a risk/rational basis using a full multimedia/societal assessment.

Union Carbide also discharges treated process wastewater to the Mississippi River. As shown in the Louisiana Chemical Association's 1990-1991 "Chemical Industry Emissions Report," discharges of SARA 313 organic chemicals declined by over 50% from 1987 to 1991.

III. HOW THE ACT HAS WORKED AND NOT WORKED

EFFLUENT GUIDELINES AND WATER QUALITY STANDARDS HAVE ACHIEVED SUBSTANTIAL REDUCTIONS

As indicated above, in 1987, EPA promulgated technology-based effluent limitations for the organic chemicals, plastics and synthetic fibers industrial point source

category (OCPSF—40 C.F.R. Part 414). These include discharge limits for conventional and non conventional pollutants, Best Available Technology (BAT) limits for more than 60 individual toxic pollutants for direct dischargers, and BAT equivalent limits for more than 40 toxic pollutants for indirect dischargers.

The impact of these standards on total releases to surface waters has been clearly demonstrated by data reported under EPA's Toxic Release Inventory. According to the TRI data, member companies of the Chemical Manufacturers Association reduced their direct discharges to surface waters by 77 percent between 1987 and 1991. Indirect discharges to publicly owned treatment works were reduced by 31 percent during this same period.

Additional reductions in surface water discharges are also occurring as a result of discharge limits based on water quality standards. These standards are established to protect aquatic life and human health and are incorporated into permit limits where needed to meet the designated Uses of waters. These water quality-based requirements are typically more stringent than the technology-based requirements and are playing an increasingly important role in driving discharges even further down.

The development of discharge limits based on both technology-based and water quality-based requirements is an evolutionary, ongoing process that will continue without any further action from Congress. Under the Act, EPA must review and revise as appropriate existing effluent limitations. EPA must also review new industries to determine the appropriateness of national limitations. In addition to water quality standards protective of aquatic life and human health, EPA is currently developing additional criteria for protection of wildlife, ecosystems and sediment quality. Added to these requirements are tools to protect the aquatic environment from adverse effect and to address the impacts of complex effluents. These tools include bioconcentration evaluations, biomonitoring requirements and where necessary numerical toxicity limits in NPDES permits. Further, there are a multitude of new programs authorized by the 1987 amendments to the Act (including new stormwater permitting requirements, new requirements to address the problems of toxic hot-spots, new pretreatment requirements and additional enforcement authority) as well as new requirements from legislation that was enacted after the 1987 amendments. These include the Great Lakes Critical Programs Act of 1990, the Coastal Zone Management Act Amendments of 1990 and the Oil Pollution Act of 1990. Implementation of some of these programs has just begun; implementation of others is underway. The full impact of all the programs added in either the 1987 amendments to the Act or in these other statutes, therefore, cannot be fully assessed. There's no question, however, that they will work to reduce industrial discharges still further.

THE ACT LACKS SUFFICIENT FLEXIBILITY TO TAKE INTO ACCOUNT MULTI-MEDIA RISK REDUCTION.

Both the goals of clean water and multi-media risk reduction can be achieved with more flexibility in the Act, in the associated regulations, and in application of regulations. Such flexibility may need to be legislatively directed, because variances such as the those based on Fundamentally Different Factors (FDF) are seldom obtainable and require extraordinary amounts of time and effort.

One example of this need is described in Appendix A for Union Carbide's petrochemical plant in Seadrift, Texas. Its large pond-type wastewater treatment system reduces toxic discharges well below OCPSF effluent guidelines. Concurrently, it removes nitrogen and phosphorous nutrients, produces no sludge, has negligible air stripping (secondary emissions) of volatile organics, and involves little added energy or chemicals. The dispersed algae in the effluent have been demonstrated to be beneficial to the particular receiving water. However, the same algae cause the OCPSF total suspended solids limit to be exceeded and the plant may be forced to construct a high-rate activated-sludge system to handle the algae.

A high-rate activated sludge system at Seadrift would be less effective in toxics reduction, would produce sludge to be landfilled, would air strip volatile organics, and would not remove nitrogen and phosphorous. In addition, such a system would be subject to upset due to flow and organic surges, and use more energy with its associated pollutants. Furthermore, tens of millions of dollars in capital and operating costs are diverted from projects which would make the plant sustainably competitive. Investment in new or retrofitted chemical facilities would result in increased reliance on source reduction and other pollution prevention techniques. More flexibility in dealing with certain requirements, like effluent suspended solids, is needed when an alternative is shown to provide a greater degree of risk reduction and environmental benefit.

A second example is at Union Carbide's petrochemical plant in Taft, Louisiana. As described in Appendix B, this situation illustrates that exercising available, but rarely used, flexibility could lead to a good at-source waste reduction solution which benefits both the environment and industry. However, the situation also shows that if the specific OCPSF Guidelines are inflexibly applied, then a poor end-of-pipe solution could be necessitated, which would have limited benefit. Contrary to popular perception, this source reduction option is the more costly approach in terms of up-front cost, however, it has a 3 to 6 year payback. Again, more flexibility to allow facilities to achieve greater net risk reduction on a multimedia basis is needed.

PHYSICAL ALTERATION OF AQUATIC HABITAT HIGHER THAN CHEMICAL ALTERATION AS A REMAINING RISK BUT HAS RECEIVED LITTLE ATTENTION TO DATE.

The above issue is a quote from the consensus *Report from the Forum of Scientists: Reauthorization of the Clean Water Act*, April 1991; the Forum was convened by EPA's Office of Water and attended by its Assistant Administrator. This particular finding confirmed a similar conclusion of an EPA's Science Advisory Board study resulting in the bench-mark report *Reducing Risk: Setting Priorities and Strategies for Environmental Protection*, September 1990.

Physical habitat alterations include reservoirs, dams, channelization, siltation due to land-use practices, and development adjacent to waterways and waterbodies and in wetlands. Water courses cannot be viewed as pipes or tubs, but rather in the context of the adjacent ecosystem that affects it. These adjacent ecosystems need to be protected if the water course is to be in its best condition.

The Clean Water Act must address the highest remaining risks. Physical alteration is one of them. "Strong provisions (for addressing physical alteration) should be included in (any) CWA reauthorization such as the provisions in the original Act and its amendments that have been successful in controlling chemical alterations toward a de minimis level" (April 1991 Forum). Incidentally, as was noted by EPA's Science Advisory Board, the Great Lakes Initiative also seems to address de minimis levels of chemicals much more rigorously than the high risk matter of physical alteration of habitat.

A very recent National Academy of Sciences study concluded that "Chronic industrial and wastewater point sources of toxic chemicals such as chlorinated dioxins, polynuclear aromatic hydrocarbons (PAHs), and solvents have been identified and controlled or are readily subject to control with existing technology." (*Managing Wastewater in Urban Areas*, National Research Council, April 1993).

I was fortunate to participate in all four studies cited above; each was a consensus of 10-40 of the best of the Nation's scientists and engineers that the organizers could muster. My conclusion is that addressing physical alteration of the aquatic habitat should not be deterred by once again focusing on the lower remaining risk from point-source industrial discharges. Such a focus was appropriate in earlier Acts; however, major improvements have been made, considerable progress is ongoing, and the minimal additional risk reduction achieved by further controls on industrial effluent parameters does not justify the tremendous costs. We need to put our resources where the real risks are.

The Clean Water Act's technology-based and water quality-based controls are designed to ensure continual improvements to water quality. As permit limits become increasingly more stringent, however, at some point the question must be asked whether additional controls on already regulated point sources will significantly reduce risks to water quality, and thereby to human health and the environment. Although the goal of the Clean Water Act is zero discharge, requiring all point source dischargers to achieve zero discharge is technically impossible absent closing down all manufacturing operations in the United States. While a laudable goal requiring zero discharge also means aiming at a moving target as analytical techniques constantly improve. Pursuit of zero discharge ignores the profound need to better understand the real risks. It also ignores the principle of diminishing returns, and the need to weigh the costs of additional regulation of industrial point sources against the benefits to the environment.

As Congress looks to reauthorize the Clean Water Act, therefore, it should take a risk-based approach to determining the appropriate focus of CWA reauthorization issues. Adding more controls on industrial point source discharges will produce little if any significant benefit to the environment. Congress should focus its reauthorization efforts instead on the most significant remaining causes of water quality impairment.

THE COMBINED TREATMENT OF DOMESTIC, COMMERCIAL, AND INDUSTRIAL WASTEWATER IS A TECHNICALLY SOUND, COST-EFFECTIVE APPROACH THAT SHOULD NOT BE CURTAILED.

The Domestic Sewage Exclusion (DSE) under RCRA should be preserved and not eliminated by amendment of the CWA. It makes good technical and economic sense to combine industrial, commercial and domestic wastewater for treatment. Advantages of maintaining the DSE include increased treatability, economies of scale, and encouragement of remediation. Existing and imminent regulations under the Clean Water Act which regulate industrial discharges should be allowed to progress. Still pending are:

- Further Effluent Guidelines for OCPSF (40 CFR 414)
- Effluent Guidelines for the Pesticide Industry (40 CFR 455)
- Effluent Guidelines for Waste Treatment (40 CFR 437)
- Effluent Guidelines for Pulp, Paper & Paperboard (40 CFR 430)
- Effluent Guidelines for Pharmaceuticals (40 CFR 439)
- Effluent Guidelines for Transportation Equipment Cleaning (40 CFR 442)
- Effluent Guidelines for Industrial Laundries (40 CFR 441)
- Sludge Regulations (40 CFR 257)

Biological treatment used by most POTW'S is extremely effective for most industrial waste constituents, including most hazardous organic wastes. This is due to continued inoculation of microorganisms in the domestic sewage, abundance of nutrients, and concentrations below inhibitory levels. Constituents which are non-degradable should be regulated by an appropriate pretreatment limit when justified by riskbased considerations, and not on the basis of classification under RCRA. POTW's have a vast array of tools, including EPA's "Fate and Treatability Estimator" (FATE) software to predict the treatability of specific constituents.

There are economies of scale in collection and treatment systems. For example, South Charleston (WV) POTW plant can treat peak domestic sewage flows because of large capacity for industrial wastewater. Typical municipal systems are bypassed during peak flows.

If the DSE were eliminated, one Union Carbide location would need to add additional, redundant treatment systems at a cost probably in the range of \$5-\$40 million for separate treatment of a wastewater stream that originates from the POTW sludge. No net reduction of discharges to the environment would occur due to separate treatment versus combined treatment, and capital needed for other projects would be lost.

The elimination of the DSE would also delay remediation of wastes, which contain hazardous constituents. Groundwater remediation can be significantly delayed if a separate wastewater treatment system must be built and permitted rather than using installed, available POTW capacity to treat contaminated groundwater. Arbitrary requirements for new wastewater treatment construction and permitting delayed a Union Carbide groundwater remedial action for years at one location. Similarly, elimination of the DSE would add unnecessary costs and delays to new production facilities.

Critics of the DSE charge that it allows indiscriminate dumping of hazardous waste into POTW's. This has certainly not been the case in Union Carbide's experience. Two large Union Carbide manufacturing locations which discharge to POTW's are subject to the stringent OCPSF pretreatment standards as well as general pretreatment requirements and local ordinances. Our smaller manufacturing and research locations are subject to local limits, which we have found to be as stringent as the OCPSF pretreatment standards.

The most sensible approach to managing the risks to POTW's from discharges of all wastes—hazardous or non-hazardous—is via the current regulatory program. This program will be enhanced as new effluent guidelines and sludge regulations are implemented. The current program is effective, technically justified, and encourages pollution prevention.

Continued implementation of two ongoing Clean Water Act programs—the effluent guidelines program and the sludge regulations program—will be far more beneficial than an absolute or partial prohibition on hazardous waste treatment in POTW's. Hazardous waste classification does not reflect risk or treatability. For example, a substance, which in its pure form is a U-listed hazardous waste, is often classified as a nonhazardous waste when it is contained in a process waste. Applying additional restrictions to ultra-low hazard "mixture rule/derived-from rule" hazardous wastes adds cost but does not reduce risk.

The pretreatment program's concentration-based limits encourage pollution prevention by at-source reduction. On the other hand, elimination of the domestic

sewage exclusion would require investment in redundant treatment and disposal systems. Union Carbide believes the most sound, long term approach is investment in pollution prevention rather than redundant treatment.

Incidentally, the Clean Air Act is already addressing secondary emissions from industrial wastes sent to sewer systems. These regulations will result in source reduction of some volatile organic compounds and in additional pretreatment of some industrial wastes.

IV. CONCLUSION

In conclusion, we believe that the Clean Water Act has made clear improvements in water quality across the United States. Existing CWA programs have succeeded in making major reductions in pollutant discharges. These programs promise more success in the future.

Any new Clean Water Act legislation should focus on remaining significant causes of water quality impairment. Further, if multi-media pollution prevention is viewed as the most promising environmental strategy of the future, Congress should promote it by making existing command and control statutes like the Clean Water Act more flexible. Without added flexibility, facilities will not always be able to address their most significant remaining risks through pollution prevention practices. Command and control was the basis of the first twenty years of environmental law, but shouldn't be the basis of the next twenty years. Pollution prevention is not a one-size-fits all proposition. Therefore flexibility will be the key to its success.

APPENDIX A

SEADRIFT (TX) PLANT OF UNION CARBIDE CORPORATION

IMPROVED RELATIVE RISK REDUCTION
AS REASON FOR FLEXIBILITY
IN OCPSF EFFLUENT GUIDELINES FOR
TOTAL SUSPENDED SOLIDS

The 400-acre pond system at Union Carbide's Sadrift Plant in Texas as presently constituted reduces more risk than would alternatives. The apparent excess effluent total suspended solids (TSS) should not be deemed an effluent discharge exceedance, as it is a natural byproduct of this more effective system and enhances local ecological systems. It is important to note that both scientifically-based "real" risk reduction and habitat preservation are EPA goals.

Risk Reduction

- Toxics removal by bacteria in this long-retention pond system exceeds that of activated sludge and levels are well below OCPSF effluent guidelines; in addition, nitrogen and phosphorous nutrients are removed by the algae.
- The liquid effluent exhibits no acute or chronic toxicity even at 100% dosage.
- Storm water and organic surges can be accommodated without system perturbation.
- With a multimedia view, no sludges need to be landfilled or incinerated and volatile organics are not air stripped.
- Pollution from production of involved energy, construction materials, and chemicals is virtually nil as little are used.

Effluent Total Suspended Solids

- The bulk (80-85%) of the 100 mg/L TSS are finely dispersed algae.
- The algae show no buildup in petrochemicals based on carbon dating.
- The receiving Victoria Barge Canal benefits from the algae in terms of biodiversity and population of fish and lower forms.
- The algae are consumed by the food chain and do not form sediment, exert a net oxygen demand, or form nuisance surface accumulation.
- The San Antonio Bay into which the Canal flows has shown no deterioration over the roughly 30 years the Plant has operated.
- The Texas Water Commission supports the positive effects of the algal discharge.

Ecology

- The large pond system provides habitat for waterfowl, fish, alligators, snakes, nutria, and micro-invertebrates.
- The biodiversity and productivity of the receiving water is enhanced by the algae in the pond effluent.

APPENDIX B**REGULATORY FLEXIBILITY AND THE BENEFITS OF
AT-SOURCE WASTE REDUCTION VS. END-OF-PIPE
TREATMENT****UNION CARBIDE'S TAFT, LA PLANT**

The following case study will show that exercising available flexibility can lead to a better solution than that mandated by current media-specific regulations; that the result is a "win-win" situation for both the environment and for industry.

DEFINITION OF ISSUE

Regulatory inflexibility in water-specific regulations may force Union Carbide to use "end-of-pipe" technology to meet the OCPSF Effluent Guidelines at its Taft, La. plant in lieu of using at-source waste reduction technology.

These alternative at-source reduction projects would not only provide a return on investment over time and reduce overall waste to all media, but would recover valuable products and reduce the need for non-renewable raw materials (petroleum feed stocks).

ABOUT THE PLANT

The Union Carbide Taft Plant is near Hahnville, Louisiana, which is approximately 30 miles up the Mississippi River from New Orleans. It employs 1200 full time and 200 contract employees with an annual payroll of \$67 million. It is the largest tax payer in St. Charles Parish (County in La).

The Taft Plant is a large integrated manufacturing facility shipping three billion pounds per year of olefins (ethylene and propylene) and olefin derivatives (ethylene oxide, ethylene amines, acrolein/acrylics, and peracetic/peracetic acids). The basic chemicals manufactured at the Taft plant are used to produce many common consumer items such as: polyethylene plastic garbage bags, brake fluids, acrylic paints, antifreeze, polyester films and fabrics,

shampoos, detergents, perfumes, pharmaceuticals, animal feed supplements, and others.

ISSUE BACKGROUND

The Taft Plant is in the Organic Chemical, Plastics and Synthetic Fiber (OCPSF) Effluent Guideline Category in the 2869 Standard Industrial Code classification. Taft's NPDES Permit expired in October, 1992, and is currently operating under the limitations of that permit, having submitted an application for renewal six months prior to expiration. Re-issuance of the permit is anticipated in mid to late 1993.

The current Wastewater Treatment Facility (WWTF) is an activated sludge system providing secondary treatment. It is extremely efficient and exceeds 99% soluble organic removal efficiency.

This current system not only meets the "toxics" limitations at current permitted levels, but for future OCPSF Effluent Guideline levels for toxics as well. However, it does not meet the OCPSF Effluent Guidelines for Total Suspended Solids (TSS) and the associated Biochemical Oxygen Demand (BOD) exerted largely by the TSS.

SOLUTION

With an end-of-pipe mind set in order to comply with water regulations, five years and \$2.5 million of Research and Development (R&D) and piloting work were expended to find a system which will meet Effluent Guidelines. The work concentrated on TSS/BOD removal and examined and piloted a variety of systems including filtration, filtration with polymer addition, carbon adsorption, pre-treatment, system re-configuration, and upgrading of secondary clarifiers. The solution was found to be an additional activated sludge polishing system with a preliminary estimated cost of \$7.5 million in 1992 dollars. This does not include ongoing operating costs. Assuming a 12% discount rate, the project has a Net Present Value (NPV) of a negative \$7.1 million dollars, which does include operating costs. This was "money down the drain". Even if this money were spent, the net impact on the environment would have been zero. It would have shifted the reductions in discharge of non-hazardous suspended solids from water to a corresponding increase in discharge to land.

After project definition, Union Carbide recognized that more "end-of-pipe" treatment was not only very costly, but was clearly not the most desirable solution.

A team was formed to explore "at-source solutions". The results showed that there is an "at-source" solution, but with qualifiers. The solution is depicted in the attached Figure. The qualifiers are:

- a) it is more expensive in terms of initial investment (about \$16.3 million).
- b) based on bench-scale testing, OCPSF Effluent Guidelines limitations for biological oxygen demand and total suspended solids will be approached but may not be completely met all the time.
- c) the solution results in a net gain for the environment.

The cost qualifier is not a major obstacle because this "at-source" solution has a 3-6 year paypack. This is due primarily to the recovery of product, but also reflects some reductions in WWTF operating costs associated with the decreased waste load.

The advantages of the at-source solution are many and include:

POLLUTION PREVENTION ADVANTAGES	DESCRIPTIVE
a) Avoidance of "end-of-pipe" investment	Once you build it, you must feed it: Creating additional infrastructure that can be used over time increases reliance on this fixed capital investment. These dollars have also been removed from consideration for other projects.
b) Reduced secondary sludge generation and subsequent land disposal	A net decrease of ~4,000 lb/day with at-source waste reduction versus "no net change" with end-of-pipe treatment.
c) Reduced secondary emissions	Less influent loading means less secondary emissions from the WWTF.
d) Product recovery	Up to 40 thousand pounds per day of products, such as ethylene glycol and acrylic acid.
e) Reduced use of raw materials used as feed stocks	Each pound of recovered product results in an equivalent reduction in need for the "up-front" raw material feed stock.
f) Influent organic load reduction	WWTF runs better and uses less energy.

The second qualifier of "not completely meeting Effluent Guidelines all the time" is the major obstacle. Union Carbide cannot afford to spend dollars on "at-source" waste reduction projects where risk exists that the resulting system may be incapable of operating in full compliance with applicable regulations. This clearly points to the need for greater flexibility in the development of legislation and administration of ensuing regulations.

In this case, because the Effluent Guidelines are "brightline" values that must be met, there is little allowance for Best Professional Judgment (BPJ) by a permit writer. This effectively prohibits alternative solutions such as at-source waste reduction.

The obvious extrapolation is to increase the number of projects in the "at-source" solution. However, there is an optimum point in the at-source/end-of-pipe trade-off beyond which solutions become impossible economically.

In this example there is flexibility available in the form of a Fundamentally Different Factors (FDF) variance. Approval of a FDF variance by the EPA can facilitate the use of a Best Practicable Judgment (BPJ) permit. Union Carbide has applied for an FDF variance for the Taft WWTF. However, this flexibility has not been exercised to-date by the EPA. As of December 31, 1992 a total of 249 FDF applications has been submitted to the EPA. Of that total, 156 were denied or withdrawn. Of the remaining 93, 86 are still pending. Of the 7 which have been approved only 1 was for an OCPSF discharger and it was only for partial relief on one OCPSF parameter while all other OCPSF parameters remained in force. Some FDF application withdrawals (such as 9 in 1992 dealing with OCPSF cyanide limits) were due to changes in the regulations made by EPA which eliminated the need for variances. The overall situation is that the FDF variance has been practically impossible to obtain. Such inflexibility effectively eliminates alternative solutions, as illustrated by Union Carbide's examples provided in this testimony, to environmental protection which are better for both environment and industry." Exercising this flexibility will facilitate the implementation of the "at-source" waste reduction solution at Taft.

Flexibility should be construed as the latitude to seek an optimum solution which best meets the requirements of sound technology, viable economics, and environmental protection. Technical, economic, and regulatory constraints must all be considered simultaneously to arrive at a workable solution. Without flexibility, this optimization process cannot occur and poor, or less-than-optimum, solutions, as illustrated by this example, will result.

SUMMARY

Union Carbide strongly urges the greater use of statutory/regulatory flexibility. The Taft Plant example illustrates that regulatory inflexibility can be an obstacle to "doing the right thing". It can lead easily to a less desirable solution. Greater future flexibility and exercising of existing flexibility can be directed to accomplish positive results which benefit the environment and industry at the same time.



UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC
P.O. BOX 6361, SOUTH CHARLESTON WV 25303

October 22, 1993

Senator Bob Graham
Committee on Environment and Public Works
United States Senate
505 Hart Senate Office Building
Washington DC 20510-6175

Dear Senator Graham:

In response to your letter of October 12, I have prepared the attached answers to the four questions you posed as follow-up to my testimony on June 16 concerning reauthorization of the Clean Water Act.

Thank you for the opportunity to contribute again to this important matter.

Very truly yours,

A handwritten signature in cursive script that reads "Richard A. Conway".

Richard A. Conway
Senior Corporate Fellow

RAC/sj

Enclosure

cc: Bill Leary, Committee Staff

CLEAN WATER ACT REAUTHORIZATION

Comments by Richard A. Conway in
Response to Questions Posed by Senator Bob Graham, 12 October 1993

1. For any additional chemicals to be regulated, the proposed requirements should be subject to peer review by qualified scientists and be subject to public comment.

I base my peer-review comments on ten years of experience on EPA's Science Advisory Board, as well as seven years on National Research Council committees, boards, and commissions.

The persons who develop any scientific document, such as a risk analysis for a specific chemical or class of chemicals under consideration for regulatory action, do so based on the specific data of which they are aware as interpreted according to their protocol and value system. Several flaws are apparent: 1) they likely are not aware of all the data in existence, 2) the validity of the protocol selected and value system used for interpretation usually diminishes as the number of people involved becomes small, and 3) the developers of the document have a stake in the outcome so are prone to overlook errors in their zeal to publish. If proper peer review is not practiced, inevitably less than best starting data bases are used, interpretation procedures are not fine tuned, and/or outright errors creep into scientific documents.

There are numerous instances in current environmental statutes where lists used for regulatory programs have never been subject to appropriate peer review. The SARA Section 313 list of chemicals, which continues to be used for purposes beyond the original intent of public emissions reporting, was derived from a series of state lists which themselves had not been reviewed. In fact, the Clean Water Act priority pollutants list has never been peer reviewed.

An adequate peer review procedure has the following elements which were developed through long experience by the National Academy of Sciences complex ("Report Review: Guidelines for Committees and Staff," NAS-NAE-IOM-NRC, July, 1989).

- Selection of a set of reviewers by a body other than the authors, based on scientific qualifications and coverage of key elements of the subject material.
- Collection of comments from the reviewers.

- A documented response (to the comments) by the writers of the subject material.
- A documented evaluation (of the response) by qualified "non-stakeholders." (Note: A "stakeholder" is any person who is affected by the subject material or even cares if it is issued or not. If the reviewers' comments were not adequately addressed by the original authors, i.e., if either all changes were not made or valid technical arguments were not presented that certain changes were inappropriate, the non-stakeholders make the final decisions on such unresolved points.)

The best scientific basis for regulating or not regulating the material thus can be assured using these peer review procedures. All then will be done to avoid both over-regulation with associated economic threats and under regulation with environmental threats. Regulating more chemicals through incorporation of lists from other sources that have not received adequate peer review is a particular problem to be avoided in new legislation.

Finally, since there are aspects of regulating given chemicals or chemical classes that are not based on science, an opportunity for public comment should be provided. The reauthorization of the CWA should include a provision that proposed regulation of any chemical undergo scientific peer review and be subject to public comment.

2. Progress has been made in establishing direct links between agricultural practices and water quality of streams and waters.

Up to about 1989, the matter of direct links between what happened in the farmer's field and diminished quality of streams in associated drainage areas was controversial, much like tobacco smoke and lung cancer were at one time. Much investigation in this area has taken place over the past four years, in part due to progressive efforts by the Department of Agriculture. Agriculture took the lead in the President's Water Quality Initiative. One example is the establishment of connections between ground water and rivers that resulted in pollution of streams by degraded atrazine; this was determined in a mid-west initiative done cooperatively by USDA, EPA, and others. An expert on this topic is Dr. Suresh Rao of the University of Florida (904/392-2302).

As I advised in my testimony, the Senate should avoid the trap of viewing water courses as a conduit subject to only chemical contamination problems. Of at least equal importance is their ecological condition. Sedimentation is one major

problem directly linked to agricultural practices; stream-bed ecology can be largely wiped out this way. The Nature Conservancy finds that sedimentation is the major threat to a nature preserve, Big Darby Creek in Ohio, and is developing programs to plant high-quality hay along the borders of farmers' fields adjacent to the Creek to prevent erosion. Banks of streams with their essential ecological niches also can be rendered barren by livestock and/or agricultural development without adequate buffer zones. I understand that Bill Cooper, another hearing witness, plans to address this question in more detail.

3. Pollution prevention programs can be constructed so that they have a measurable and protective effect on water quality parameters of significant risk.

I strongly agree that pollution prevention is not an end in itself. The principal objective should be risk reduction, and pollution prevention is an important tool to reducing risk. The value of pollution prevention should be assessed on the basis of multi-media risk reduction. It is appropriate that multi-media pollution prevention should not compromise our water quality goals. It is important to note that decreasing releases to air and land improve surface water quality due to less atmospheric deposition, surface runoff, and groundwater /surface water interactions. Thus such efforts should not necessarily be viewed as a net negative for water quality.

Some options that would specifically and measurably relate pollution prevention efforts with water quality are:

- As documented in my written submittal to the 12 June hearing (excerpt attached) pollution prevention projects exist that can reduce much more significant risks via air and land media with insignificant increases in risk to surface water. The permit writers should be empowered with sufficient flexibility to make such evaluations and implement alternative compliance strategies.
- When alternative measures bring multi-media improvements, but don't quite meet BAT standards, consideration should be given to still meeting water quality criteria or standards.
- Where water quality standards are not quite met by the source implementing multi-media programs, attainment of water quality standards could be achieved through the watershed management process in Title III of S. 1114. It may be far more cost-effective to make up the

difference from elsewhere in the watershed, recognizing that the facility's reductions in other media will still be of some benefit to water quality.

- It may be desirable in some cases to allow pollutant reductions achieved by other dischargers in a watershed to supplement an alternative compliance strategy of a facility that is pursuing a multi-media pollution prevention project, as long as overall water quality benefits are achieved. More information on the relative water quality impacts of different pollutants is needed to enable watershed management entities to evaluate the overall net water quality impact of different pollution reduction scenarios and water quality impacts caused by different substances in a watershed.
- Implementation of BAT could be deferred if a planned pollution-prevention project to be completed within two to three years would reduce effluent quality below the predicted BAT level.

In addition, voluntary pollution prevention efforts can often begin earlier in areas where water quality based permits have not been issued. Early reductions, though not necessarily equivalent with a water quality standards, can have a cumulatively beneficial effect. Incidentally, in addition to usually having a measurable effect on reducing risk to human health and ecological systems, pollution prevention has several other benefits. Regulatory compliance aside, reduction of pollution generation prevents release of unregulated material not now thought to present health/ecological problems but could be later so identified; pollution prevention also reduces consumption of non-renewable resources, enhances the aesthetic quality of life by not generating waste that are nuisances, and increases the environmental ethic of workers involved.

The above elements should be considered when a pollution prevention and non-pollution prevention solution are being weighed and the regulatory results are close. Considering the safety margins or uncertainty factors of 100 to 1000 percent imbedded in regulatory limits, I would define "close" as within a safety factor of no less than 70 percent for conventional pollutants with a larger, as their embedded safety factor is much larger.

4. Best management practices need to be developed, implemented, and enforced for agriculture and silviculture as BAT has been for industry.

Reauthorization of the Clean Water Act should address the remaining higher-risk areas like non-point-source pollution. "Teeth" should be put into the

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Act to enforce states to develop, adopt, and implement best management practices (BMP) for agriculture and silviculture. Funds to do this could be provided to the states; a default could be that USDA/EPA would do it if states do not. BMP should be developed in conjunction with that state's appropriate academic institutions and be reviewed by the affected regulated community for economic feasibility. The environmental risks being addressed should be ranked high, medium, and low and a targeted priority established.

TESTIMONY OF JAMES R. KARR, DIRECTOR, INSTITUTE FOR ENVIRONMENTAL STUDIES, UNIVERSITY OF WASHINGTON

Thank you, Mr. Chairman, for inviting me to appear before this committee to comment on the chemical, physical, and biological health of the waters in the United States and whether and to what extent the Clean Water Act has achieved its goals.

OVERVIEW

Societal perceptions of water resources have evolved rapidly in the past decade thanks to the widespread recognition that humans depend on fresh water and the resources associated with fresh water. Abundant evidence indicates that the quality of water resources is being degraded and the supply of fresh water is being depleted. **DEGRADATION CONTINUES BECAUSE WE HAVE IMPLEMENTED THE CWA AS IF CRYSTAL CLEAR DISTILLED WATER RUNNING DOWN CONCRETE CONDUITS WERE THE GOAL OF THE ACT.**

The gap between the mandate and accomplishments of the CWA widens despite accomplishments such as reduction in the volume of chemical contaminants released to water bodies. The gap widens because a narrow perspective has dominated implementation of the CWA. We waste money and degrade resources because decisions based on chemical criteria do not protect the condition of the resource; priority lists of chemicals do not accurately reflect ecological risks; and point-source approaches do not effectively control the influence of nonpoint sources or the cumulative effects of numerous contaminants. Finally, the chemical contaminant approach fails to diagnose water resource problems caused by other human influences.

We can be proud of our success in regulating contamination from some point sources, but we should not allow those accomplishments to permit us to overlook continuing degradation in resource condition. Rather, we should focus our energies to protect water resources from all forms of degradation.

Continuing degradation of aquatic systems is obvious, even to the untrained eye, because government agencies have been weak, inappropriately focused, and therefore largely ineffective at reversing resource declines. Underfunding—the chronic complaint from all bureaucracies and scientists—is not, however, the most important problem. The most important problem is that we do not see water resources as integrated and complex natural resource systems. Failure to adopt such an integrative perspective in reauthorizing the CWA is unacceptable on legal, scientific, economic, and ethical grounds.

THE CWA MANDATE

Although the mandate of the Clean Water Act was to “restore and maintain the physical, chemical, and biological integrity of the nation’s waters,” its implementation has concentrated on two issues: effectiveness of wastewater treatment technology to control point sources of pollution and human cancer risk. The dominance of these two issues has prevented program managers, political leaders, and the public at large from tracking the actual condition of the resources. Growing recognition of the downward trend is stimulating many to call for change in the vision and mandate of the CWA. In drafting a solution, we must keep in mind the admonition from Albert Einstein that goes something like: **“YOU CANNOT SOLVE A PROBLEM BY APPLYING THE CONCEPTUAL FRAMEWORK THAT CREATED IT.”** We need a new conceptual framework to protect our water resources.

Volumes can and no doubt will be written to convey the details of change that should be considered. To shift the conceptual framework, as called for by Einstein, we need to **SHIFT THE SOCIETAL FOCUS FROM WATER QUALITY TO A BROADER CONCEPT: THE ECOLOGICAL HEALTH OF THE WATER RESOURCE SYSTEM.**

Another shift will have to come in our use of the word pollution. We waste large sums of money, and degrade water resources, because of our narrow conceptual focus on chemical contamination and its prevention. In conventional usage and in the technical jargon that permeates the CWA and its implementing regulations, pollution is usually assumed to mean chemical contamination. But human influences on water resources are broader than chemical contamination. A more appropriate definition, present in the 1987 CWA but little used, states that pollution is any “[hu]manmade or [hu]man-induced alteration of the physical, chemical, biological, or radiological integrity of water.” Under this definition, humans may degrade or pollute by withdrawing water for irrigation, by overharvesting fish populations, or by introducing exotic species or chemical contaminants. Just as one needs to assess risks carefully to protect human health, one needs to assess risks carefully in formulating policies to protect the ecological health of water resource systems. Such

risk assessment requires a framework broader than control of toxics, or even chemical contamination—a framework that goes beyond faith in chemical criteria and technological solutions to address all these influences.

WATER RESOURCE TRENDS

Using chemical criteria, USEPA acknowledges that water resources throughout the United States are significantly degraded. In 1990, the states reported to USEPA that 998 water bodies had fish advisories in effect, and 50 water bodies had fishing bans imposed. More than one-third of river miles assessed do not fully support designated uses as defined under the CWA. More than half of assessed lakes, 98% of the assessed Great Lakes shore miles, and 44% of assessed estuary area did not fully support designated uses. To make matters worse, EPA UNDERESTIMATES THE MAGNITUDE OF THE PROBLEM BECAUSE ITS ANALYSES ARE BASED ON CHEMICAL RATHER THAN BIOLOGICAL CRITERIA.

Under section 305(b) of the CWA, states are required to report the status of water resources within their boundaries. In one state, the proportion of the state's waters assessed as degraded doubled as a result of the more comprehensive, sensitive, and objective assessment provided by using biological criteria. IN OTHER WORDS, WHEN THOSE STATUS REPORTS INCLUDE BIOLOGICAL EVALUATIONS, THEY SHOW THAT CONVENTIONAL CHEMICAL CRITERIA FAILED TO DETECT 50% OF THE IMPAIRMENT OF SURFACE WATERS.

That conclusion is reinforced when one examines the biota of America's fresh waters. Aquatic organisms are seriously threatened. Only 11 to 14% of North American terrestrial vertebrates (birds, mammals, and reptiles) are classed as rare to extinct, but from 34 to 73% of major aquatic taxa are classed as rare to extinct. One-third of the native fishes of the Colorado River are endangered, threatened, or extinct. Twenty percent of the mussels and their relatives of the Tennessee River have been lost, and 45% of the remaining species are endangered or seriously depleted.

Sport and commercial fisheries of the United States have also been decimated by human actions during this century. Since 1910, wild salmon runs on the Columbia River have declined by more than 96%. The Illinois River (Illinois), second in commercial catch to the Columbia early in this century, declined to a near zero commercial catch over a decade ago. Commercial fish harvests in the Missouri and Delaware rivers have declined by more than 80% this century. How would we respond as a society if our agricultural productivity declined by more than 80%? How can we continue to ignore declines of that magnitude in water resources, which are just as essential to the economic and ecological health of human society?

On top of the loss of species and the massive decline in commercial and sport harvest, consumption of what fish remains often threatens the health of humans. Fish consumption advisories, sport fishing restrictions, or sport fishing closures occur in more than 40 states each year, and women who consume contaminated fish bear children with significant mental impairment, which persists at least to age 4. This intergenerational effect is now emerging as a hidden, and previously unsuspected, cost of the status quo.

THESE AND OTHER EXAMPLES OF DEGRADATION OF WATER RESOURCE SYSTEMS DEMONSTRATE THAT OUR DEPENDENCE ON TECHNOLOGY-BASED STANDARDS AND CHEMICAL CRITERIA TO PROTECT THE QUALITY OF OUR WATER RESOURCES HAS FAILED.

WHERE DO WE GO FROM HERE?

The technology-based approaches of the past 20 years concentrated on a narrow range of human actions while equally serious threats were ignored. But humans degrade streams and other water bodies in one or more of five major ways (Table 1). Efforts to protect the quality of water resources are doomed unless they explicitly incorporate this range of factors into a comprehensive planning and assessment process.

Table 1.—Degradations in Resource Characteristics Typical of Problems in Northwest Watersheds

Factor	Typical degradation in northwest watersheds
Food (energy) source	Altered supply of organic material from riparian corridor. Reduced or unavailable nutrients from the carcasses of adult salmon after spawning.
Water quality	Increased temperatures. Oxygen depletion. Chemical contaminants.
Habitat structure	Sedimentation and loss of spawning gravel. Obstructions that interfere with movement of adult or juvenile salmonids. Lack of coarse woody debris. Destruction of riparian vegetation and overhanging banks. Lack of deep pools. Altered abundance and distribution of constrained and unconstrained channel reaches.
Flow regime	Altered flows that limit survival rates during any phase of the salmon life cycle.
Biotic interactions	Increased predation on young by native or exotic species. Overharvest by sport or commercial fishers.

Two important advances in the past decade are key to protection of water resources: (1) development of a broader conceptual perspective to protect the health of the entire resource system from an array of human influences, not only chemical contamination, and (2) use of biological monitoring and biocriteria to protect the quality of water resources. Biocriteria provide cost effective and sensitive tracking of resource condition. Biological monitoring is especially critical because impairment of waters is predominantly caused by nontoxic and nonchemical factors. Additional strengths of biological monitoring include the ability to assess and characterize resource status; diagnose and identify chemical, physical, and biological impacts as well as their cumulative effect; serve a broad range of environmental and regulatory programs when integrated with chemical and toxicity assessments; and provide a cost-effective approach to resource protection. Ambient biological monitoring is less likely to under protect the water resource than the current chemical approach. Finally, ample evidence exists to show that chemical approaches can waste economic and environmental resources.

IMPEDIMENTS TO BIOLOGICAL MONITORING HAVE BEEN LARGELY OVERCOME

Recent studies by state and federal agencies and by university-based scientists have shown that the classic arguments against biological monitoring carry little weight relative to the resource protection benefits that result. Recent studies show that biological monitoring is cost-effective, broadly based ecologically, flexible for special needs, sensitive to a broad range of degradation, and easy to explain to the general public. Moreover, biological monitoring provides direct and meaningful evaluations of resource condition because it integrates cumulative effects, such as point and nonpoint pollution, habitat degradation, and flow alteration.

Technological or engineering approaches typically deny or ignore common signs of biological impairment, a problem that biological monitoring overcomes. Limited legal and regulatory programs foster dependence on technology-based controls of pollution and dominance of a narrow chemical-contaminant definition of pollution.

Ever-expanding human influences on water resources produce a shifting array of problems. Biological monitoring increases the likelihood that unanticipated problems will be detected earlier rather than later. Criteria developed for many chemi-

cal contaminants were (now obviously incorrectly) applied uniformly for all water resources, and the lack of uniformity in biological expectations was considered a weakness. We now recognize that lack of uniformity reflects the true water resource situation. In retrospect, the idea that the same criteria should apply to all waters is ludicrous.

CHANGING THE CLEAN WATER ACT

1. THE PHRASE WATER QUALITY WITH A BROADER CONCEPT, SUCH AS PROTECTING THE ECOLOGICAL HEALTH OF THE WATER RESOURCE SYSTEM. Society no longer tolerates dilution as the solution to pollution. That approach has compromised resource quality on too many miles of rivers and acres of surface water. Not only should we see water resources in this broader context, we should see human influences on water in a broader context. Humans degrade water resources in numerous ways, and we must become more effective at distinguishing degradation by humans from variation caused by natural events. Efforts to protect resources, or to halt and even reverse degradation, are unlikely to succeed without careful analysis of the nature and consequences of diverse local and regional impacts.

2. AMBIENT BIOLOGICAL MONITORING CENTRAL TO ASSESSING THE QUALITY OF THE NATION'S WATER RESOURCES. Ambient biological monitoring involves examining the biota (fish, invertebrates, plants, and so on) of a water body. The species composition, relative abundance, and health of individual organisms measure local biological conditions and, thus, human-induced degradation of streams, lakes, and estuaries. Biological monitoring is an essential supplement to chemical monitoring because it provides a more direct and accurate evaluation of resource condition. All environmental legislation is grounded in biology—not chemistry, physics or mathematics. The objective of ecological health is a biological objective, and, thus, biological evaluations are critical to all water resource assessments.

3. EVALUATE THE ACTUAL RESULTS OF MANAGEMENT AND PROTECTION PROGRAMS. We remain blissfully ignorant of the actual benefits and costs of regulatory actions ostensibly designed to protect water quality but with unknown influence on the health of water resources. For decades, we have operated water quality programs as if the relationships between societal action and resource condition were known. In fact, our policies are untested hypotheses that continue to permit resource degradation. We can—indeed should—use management programs as experiments to test our hypotheses about system responses to human actions. Only then can we modify management programs to benefit society, both economically and environmentally.

SUMMARY

Reduction in ecological risk should be a central component of the reauthorization of the Clean Water Act because healthy ecological systems are the foundation of a healthy economy and society. To protect ecological health, we should focus decisions in ways that will protect the inherent potential of natural systems—potential that includes their capacity for self-repair and requires little management intervention.

SOCIETY WOULD NOT TOLERATE AN APPROACH THAT DEFINED THE MEDICAL TECHNOLOGY TO BE USED RATHER THAN AN APPROPRIATE HUMAN HEALTH ENDPOINT. THE TIME IS RIPE FOR USING THE SAME WISDOM TO EXPLICITLY DEFINE AND PROTECT BIOLOGICAL ENDPOINTS AND THUS PROTECT THE ECOLOGICAL HEALTH OF WATER RESOURCES.

MAX BAUCUS, MONTANA, CHAIRMAN
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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 WASHINGTON, DC 20510-8175

October 12, 1993

Dr. James Karr
 Institute for Environmental Studies
 Engineering Annex
 FM 12
 University of Washington
 Seattle, Washington 98195

Dear Dr. Karr:

The Subcommittee appreciates your participation in the hearings of the Subcommittee on Clean Water, Fisheries and Wildlife in its review of the Clean Water Act. In furtherance of our review, we have a few follow-up questions for the record. Please provide your answers to Bill Leary at 505 Hart Senate Office Building, Washington, D.C. 20510 by October 29, 1993.

1. Can you expand on your comments about the need for peer review? What has been the affect, if any, of not providing peer review under the Clean Water Act? Could you describe what, in your opinion, would be an appropriate and adequate peer review process and the kind of contribution that it would make?
2. A 1988 Agricultural Department study questioned the current ability to identify a direct link between agricultural "discharge" and the water quality of receiving streams. For example, it says: "Offsite damage associated with water pollution cannot be measured directly and links between farming and affected water uses are not well defined. Many assumptions are made to estimate offsite damage, and both methods and data for estimating damage need to be improved." Bradley M. Crowder, Marc O. Ribaldo, and Edwin Young, "Agriculture and Water Quality," Washington: USDA, August 1988, p. 2.

For example, I understand that in one research study of phosphorus loading and nonpoint source pollution in Estonia, the authors concluded that phosphorus stream loadings from intense agricultural operations are quite low, in spite of the fact that phosphorus loadings are high in the fields. The field-generated phosphorus combines with the sediment to prevent stream damage. whereas phosphorus loadings from industrial and municipal sources are highly interactive. E. Loigu, "Evolution of the Impact of Non-point Source Pollution on the Chemical Composition of Water in Small Streams and Measures for the Enhancement of Water Quality," Advances in Water Pollution Control, H. Laikari, ed., 1989, pp. 213-217.

Have we made any progress in establishing a direct link between what happens in a farmer's field and what occurs to the water quality of streams and waters?

3. In looking at pollution prevention as a toll for improving water quality, it is conceivable that in our zeal for pollution prevention, we can and will identify ways to place controls on the front end without necessarily improving water quality, or being able to document scientifically a relationship between the pollution prevention effort and an improvement in stream quality. What recommendations would you make to this committee about the construction of a pollution prevention program to assure that pollution prevention does not become the end itself, but rather that those pollution prevention efforts undertaken will have a measurable and protective effect on water quality?
4. In your report to EPA, you state that restrictions on agricultural and silvicultural practices should be included in any federal program for nonpoint source pollution control. What restrictions did your team have in mind?

Sincerely,

Bob Graham
Chairman
Subcommittee on Clean Water,
Fisheries and Wildlife

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November 2, 1993

Senator Bob Graham, Chairman
Subcommittee on Clean Water, Fisheries, and Wildlife
Committee on Environment and Public Works
United States Senate
Washington, DC 20510-6175

Dear Senator Graham:

Your letter of several weeks ago asks me to provide answers to follow-up questions for the record on my testimony June 16, 1993. Many of the questions in that letter seem to be directed to others that have appeared before your committee. Thus, I will pass on those questions; however, it seems appropriate for me to address several other issues at this time.

I want to raise concerns about the language used to address protection of the biological components of water resource systems. As you know, a very powerful goal statement was included in the 1972 Clean Water Act (PL 92-500) and that phrase ("restore and maintain the physical, chemical and biological integrity of the Nation's waters") has been maintained in subsequent reauthorizations. The time is ripe to reinforce the message of that phrase throughout the legislation before your committee.

I suggest you adopt language that makes the following issues explicit.

1. *Retain language that explicitly calls for protection of indigenous species.*

Exotic and introduced species threaten valued native populations of fish, shellfish, and other aquatic organisms. If the CWA fails to specify maintenance of indigenous species, we risk the loss of native species. Who would prefer a shift from populations of salmon to carp, for example, a shift that might be defended without explicit language addressing protection of indigenous species as a CWA goal? Why not protect against management allowing intentional or accidental introduction of exotic species such as the zebra mussel, sea lamprey, or purple loosestrife (an invasive weed of wetlands). In many cases, we can demonstrate that the introduction of these exotics has more ominous and long-lasting influences than chemical contaminants on water resources of importance to human society. Finally, virtually all of the leading scientific methods proposed to evaluate biological integrity explicitly recognize exotic species as indicators of water resource degradation.

Even if we could achieve zero discharge of chemical pollution, the quality of our water resources will continue to decline if we ignore other causes of resource degradation. Chemical pollution and toxicants are not the only threat to aquatic resources. Channel modification, flow alteration, and introduction of non-native species all represent important threats to the physical, chemical, and biological integrity of our water resources.

2. *Adopt language that goes beyond the protection of fish, shellfish, and wildlife to protect the entire biota of the nation's waters.*

Although certain taxa have obvious importance to humans because of their value as commodities, those species do not exist in isolation. Often we cannot predict which other organisms are critical to the persistence of commercially valuable (fish or shellfish) or charismatic (wildlife) species. Exclusion of insects, zooplankton, phytoplankton, higher plants, bacteria, and fungi from protection under the act ignores the important contribution of these taxa to the structure and function of an ecologically healthy biotic community, a community that is essential to maintenance of valuable aquatic resources. No matter how important a particular species is to human society, it cannot persist outside the biological context that supports and maintains it.

Reauthorization of the act provides an opportunity to reinforce the importance of these concepts by extending the language to include all major taxa (species). The relative importance of all those groups may shift under different circumstances and in different locations. Finally, we should not presume that we know today which species are important, a fact that is clearly demonstrated by recent recognition of the unexpected value to society of the Pacific yew. Because it is prudent to cast our net widely to protect the interests of future generations, reauthorization language should go beyond "fish, shellfish, and wildlife."

3. *Broaden the language to protect biological integrity in its broadest sense, including not only populations but the structural and functional organization of that biota.*

Water resources are not simply water; their quality and value as resources depend on underlying biological processes. USEPA recognizes that an assessment of species richness, species composition, populations, and trophic composition of the resident biota is "the most direct measure possible of support of a Clean Water Act goal, because maintaining biological integrity is one of the legislative mandates" (USEPA, Feasibility Report on Environmental Indicators). Biological integrity as defined by the EPA does not emphasize certain taxa to the exclusion of others as current language in the CWA does. Biological integrity is defined by the EPA as "the condition of the aquatic community inhabiting unimpaired waterbodies of a specified habitat as measured by community structure and function" (USEPA, 1990. Biological Criteria: National Program Guidance for Surface Waters. EPA-440/5-90-004.) An aquatic community, as defined in the Biological Criteria document just cited, is "an association of interacting populations of aquatic organisms in a given waterbody or habitat". The emphasis is on the interaction and association of species and the structure and function of resident aquatic communities (see pages viii, 5, 13 of that document).

In short, references to the maintenance of populations or abundances should be broadened to refer to structure and function in the biotic community. Many states already assess water resource condition in this broader context, and USEPA encourages this view (see EPA-440/5-90-004 again). Population abundance is a notoriously difficult attribute to measure because of its inherent variability, a fact that was recognized as early as 1919 by the pioneering biologist S. A. Forbes in his papers on degradation in the Illinois River. Thus, the broader view is scientifically defensible. Its explicit inclusion in the CWA reauthorization will ensure adoption of that leading edge approach to resource protection throughout the nation.

Senator Bob Graham


-3-

November 3, 1993

Finally, structural and functional aspects of the biotic community--such as trophic composition, species richness, and species composition--measure higher-order, community-level processes and therefore provide a more meaningful characterization of aquatic resource condition.

Making these three changes explicit will strengthen the Clean Water Act as it improves and clarifies its mandate. These suggestions are based in published EPA documents or in advances in science over the past decade. I hope these hurried comments will prove useful in your deliberations. Please feel free to call on me if I can be of further assistance.

Sincerely,



James R. Karr
Director

103D CONGRESS
1ST SESSION

S. 1114

To amend and reauthorize the Federal Water Pollution Control Act, and
for other purposes.

IN THE SENATE OF THE UNITED STATES

JUNE 15, 1993

Mr. BAUCUS (for himself and Mr. CHAFEE) introduced the following bill;
which was read twice and referred to the Committee on Environment and
Public Works

A BILL

To amend and reauthorize the Federal Water Pollution
Control Act, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE; TABLE OF CONTENTS; REF-**
4 **ERENCES.**

5 (a) **SHORT TITLE.**—This Act may be cited as the
6 “Water Pollution Prevention and Control Act of 1993”.

7 (b) **TABLE OF CONTENTS.**—The table of contents of
8 this Act is as follows:

Sec. 1. Short title; table of contents; references.

Sec. 2. Findings and purpose.

TITLE I—WATER PROGRAM FUNDING

- Sec. 101. State revolving loan funds.
- Sec. 102. State program grants.
- Sec. 103. General program authorizations.

TITLE II—TOXIC POLLUTION PREVENTION AND CONTROL

- Sec. 201. Point source technology based controls.
- Sec. 202. Water quality criteria and standards.
- Sec. 203. Toxic pollutant phase-out.
- Sec. 204. Pretreatment program.
- Sec. 205. Pollution prevention planning.

TITLE III—WATERSHED PLANNING AND NONPOINT POLLUTION CONTROL

- Sec. 301. Water quality monitoring.
- Sec. 302. Comprehensive watershed management.
- Sec. 303. Impaired waters identification.
- Sec. 304. Nonpoint pollution control.

TITLE IV—MUNICIPAL POLLUTION CONTROL

- Sec. 401. Combined sewer overflows.
- Sec. 402. Stormwater management.
- Sec. 403. Water conservation.

TITLE V—PERMIT PROGRAM AND ENFORCEMENT

- Sec. 501. Permit fees.
- Sec. 502. Permit program modifications.
- Sec. 503. Enforcement.

TITLE VI—PROGRAM MANAGEMENT

- Sec. 601. Technology development.
- Sec. 602. State certification.
- Sec. 603. Reports to Congress.
- Sec. 604. Definitions.
- Sec. 605. Indian programs.
- Sec. 606. Clean water education.
- Sec. 607. National estuary program.

1 (c) REFERENCES TO THE FEDERAL WATER POLLU-
 2 TION CONTROL ACT.—Whenever in this Act an amend-
 3 ment or repeal is expressed in terms of an amendment
 4 to, or repeal of, a section or other provision, the reference
 5 shall be considered to be made to a section or other provi-
 6 sion of the Federal Water Pollution Control Act (33

1 U.S.C. 1251 et seq.), except to the extent otherwise spe-
2 cifically provided.

3 **SEC. 2. FINDINGS AND PURPOSE.**

4 (a) **FINDINGS.**—Congress finds the following:

5 (1) Over the past 20 years, the Federal Water
6 Pollution Control Act has resulted in great progress
7 towards achieving the goal Congress established
8 when Congress enacted such Act in 1972: “to re-
9 store and maintain the chemical, physical, and bio-
10 logical integrity of the Nation’s waters”.

11 (2) Despite this progress, significant water pol-
12 lution problems remain. Thirty percent of the waters
13 of the United States suffer varying degrees of water
14 quality impairments, toxic pollutants remain a sig-
15 nificant threat to aquatic systems and to human
16 health, and pollution from nonpoint sources accounts
17 for significant impairments.

18 (3) There is a substantial need for water qual-
19 ity projects throughout the country. The cost of sew-
20 age treatment projects is estimated to be
21 \$80,000,000,000.

22 (4) In order to achieve further progress, addi-
23 tional resources must be made available to State and
24 municipal governments, including increased financial

1 assistance for water quality projects and increased
2 program support through permit fees.

3 (5) Substantial opportunities exist to improve
4 water pollution control by using new water pollution
5 control strategies, such as pollution prevention plan-
6 ning, water conservation, the development of innova-
7 tive pollution control technology, comprehensive wa-
8 tershed planning, and programs that protect the
9 physical and biological properties of aquatic systems.

10 (6) Substantial opportunities exist to improve
11 water pollution control by improving the operation of
12 existing programs that apply to toxic pollutants, in-
13 cluding pollutant criteria and standards, effluent
14 guidelines, pretreatment standards, and the author-
15 ity to phase out certain toxic pollutants.

16 (7) Substantial opportunities exist to improve
17 water pollution control by addressing pollution from
18 nonpoint sources, such as construction, forestry, and
19 agriculture, particularly through the use of water-
20 shed planning, targeted control measures, and finan-
21 cial assistance.

22 (8) Pollution from overflows from combined
23 storm and sanitary sewers and from stormwater dis-
24 charges continues to cause significant water quality
25 impairments. A long-range strategy for control of

1 these discharges, which recognizes financial con-
2 straints, is necessary.

3 (9) All dischargers to the waters of the United
4 States, including Federal agencies, have an obliga-
5 tion to comply with water quality laws. More can be
6 done to ensure that enforcement by Federal and
7 State governments and citizen groups is prompt and
8 effective.

9 (b) PURPOSE.—The purpose of this Act is to reau-
10 thorize the Federal Water Pollution Control Act in order
11 to provide expanded assistance to State governments, ad-
12 dress remaining water pollution control problems, employ
13 new pollution control strategies, and improve overall water
14 program implementation.

15 **TITLE I—WATER PROGRAM** 16 **FUNDING**

17 **SEC. 101. STATE REVOLVING LOAN FUNDS.**

18 (a) GRANTS TO STATES FOR ESTABLISHMENT OF
19 REVOLVING FUNDS.—

20 (1) IN GENERAL.—Subsection (a) of section
21 601 (33 U.S.C. 1381(a)) is amended to read as fol-
22 lows:

23 “(a) GENERAL AUTHORITY.—Subject to this title,
24 the Administrator shall make capitalization grants to each

1 State for the purpose of establishing a water pollution con-
2 trol revolving fund.”.

3 (2) PROJECTS ELIGIBLE FOR ASSISTANCE.—

4 Subsection (c) of section 603 (33 U.S.C. 1383(c)) is
5 amended to read as follows:

6 “(c) PROJECTS ELIGIBLE FOR ASSISTANCE.—

7 “(1) IN GENERAL.—The funds available to each
8 State water pollution control revolving fund (re-
9 ferred to in this section as the ‘fund’) may be used
10 only for providing assistance, for projects with re-
11 spect to which the principal purpose is protecting
12 and improving water quality, to a municipality,
13 intermunicipal agency, interstate agency, State agen-
14 cy, or individual, to carry out 1 or more of the fol-
15 lowing activities:

16 “(A) The construction of a publicly owned
17 treatment works, as defined in section 212.

18 “(B) Implementing an approved manage-
19 ment program under section 319.

20 “(C) Implementing an approved conserva-
21 tion and management plan under section 320.

22 “(D) Implementing a combined stormwater
23 and sanitary sewer overflow elimination pro-
24 gram.

1 “(E) Providing assistance to a subsurface
2 sewage disposal management organization ap-
3 proved by the Administrator pursuant to sec-
4 tion 319.

5 “(F) Carrying out projects identified in a
6 watershed plan prepared pursuant to section
7 321.

8 “(G) Implementing a Lakewide Manage-
9 ment Plan or Remedial Action Plan developed
10 pursuant to section 118.

11 “(H) Implementing a lake protection
12 project developed pursuant to section 314.

13 “(I) Constructing an animal waste man-
14 agement facility approved pursuant to section
15 319.

16 “(2) LIMITATION OF ASSISTANCE.—

17 “(A) DISCHARGE ACTIVITIES.—Assistance
18 provided under this subsection to an individual
19 for an activity related to a discharge shall be
20 limited to an activity not otherwise required by
21 this or other Federal law.

22 “(B) OTHER ACTIVITIES.—Assistance pro-
23 vided under this subsection for projects eligible
24 pursuant to subparagraphs (F) through (I) of
25 paragraph (1) shall be limited to projects that

1 are consistent with a watershed plan prepared
2 under section 321.

3 “(3) REVOLVING FUND.—The fund shall be es-
4 tablished, maintained, and credited with repayments,
5 and the fund shall be available in perpetuity for as-
6 sisting eligible projects.

7 “(4) ASSISTANCE FOR CONSTRUCTING PUB-
8 LICLY OWNED TREATMENT WORKS.—Assistance pro-
9 vided pursuant to subparagraphs (A) and (D) of
10 paragraph (1) may include the cost of obtaining any
11 necessary land, easement, or right-of-way with re-
12 spect to which the recipient of assistance is not the
13 owner (at the time of receipt of assistance) that is
14 directly related to the treatment plant or outfall of
15 a publicly owned treatment works, except that the
16 amount provided as assistance may not exceed the
17 assessed value of the land, easement, or right-of-
18 way.”.

19 (b) CAPITALIZATION GRANTS.—

20 (1) SPECIFIC REQUIREMENTS FOR CAPITALIZA-
21 TION GRANT AGREEMENTS.—

22 (A) CAPITALIZATION GRANT AGREE-
23 MENTS.—Section 602(b)(6) (33 U.S.C.
24 1382(b)(6)) is amended—

1 (i) by striking “1995” and inserting
2 “2001”;

3 (ii) by striking “201(g)(1),
4 201(g)(2),”; and

5 (iii) by striking “201(g)(6)”.

6 (B) GRANTS FOR CONSTRUCTION OF
7 TREATMENT WORKS.—Section 201 (33 U.S.C.
8 1281) is amended—

9 (i) in subsection (g)(5), by adding at
10 the end the following new sentence: “Not-
11 withstanding any other provision of this
12 paragraph, the Administrator may deem
13 that the requirements of this paragraph
14 have been met by a treatment works that
15 serves 10,000 or fewer individuals if the
16 treatment works has considered a group of
17 alternatives described by the Administrator
18 in guidance documents.”; and

19 (ii) in subsection (o), in the matter
20 preceding paragraph (1), by inserting after
21 “assist applicants for grant assistance
22 under this title” the following: “(except for
23 any applicant for grant assistance for a
24 publicly owned treatment works that serves
25 10,000 or fewer individuals)”.

1 (C) STATE SHARE.—The first sentence of
2 section 204(b)(1)(A) (33 U.S.C. 1284(b)(1)(A))
3 is amended by striking “proportionate”.

4 (2) DEDICATED SOURCE.—Section
5 603(d)(1)(C) (33 U.S.C. 1383(d)(1)(C)) is amended
6 by inserting “for a project eligible under subpara-
7 graph (A), (D), or (E) of subsection (c)(1)” after “a
8 loan”.

9 (3) CONSISTENCY WITH PLANNING REQUIRE-
10 MENTS.—Section 603(f) (33 U.S.C. 1383(f)) is
11 amended—

12 (A) by striking “is consistent with” and in-
13 serting “is not inconsistent with”; and

14 (B) by striking “and 320” and inserting
15 “320, and 321”.

16 (c) TECHNICAL ASSISTANCE FOR SMALL SYSTEMS.—
17 Section 602 (33 U.S.C. 1382) is amended—

18 (1) in subsection (b)—

19 (A) in paragraph (2), by inserting “except
20 as provided in subsection (c),” before “the
21 State will deposit”; and

22 (B) in paragraph (3), by inserting “except
23 as provided in subsection (c),” before “the
24 State will enter”; and

1 (2) by adding at the end the following new sub-
2 section:

3 “(c) TECHNICAL ASSISTANCE FOR SMALL SYS-
4 TEMS.—

5 “(1) DEFINITIONS.—As used in this subsection:

6 “(A) SMALL SYSTEM.—The term ‘small
7 system’ means a publicly owned treatment
8 works or a subsurface sewage disposal system
9 that serves 10,000 or fewer individuals.

10 “(B) TECHNICAL ASSISTANCE.—The term
11 ‘technical assistance’ includes technical and fi-
12 nancial management assistance provided by a
13 State to a small system. The term includes as-
14 sistance provided by a State for the planning
15 and design of a small system (referred to in
16 this subsection as ‘facility planning and de-
17 sign’).

18 “(2) VALUE OF PLANNING AND DESIGN ASSIST-
19 ANCE.—The value of planning and design assistance
20 provided to a small system shall be repaid as part
21 of any loan provided to the small system pursuant
22 to this title.

23 “(3) TECHNICAL ASSISTANCE.—

24 “(A) IN GENERAL.—

1 “(i) OFFSET.—Subject to subpara-
2 graphs (B) and (C), each State may re-
3 duce the amount that would otherwise be
4 required to be deposited by the State as
5 State matching funds under subsection
6 (b)(2) by the amount equal to the value of
7 technical assistance provided by the State,
8 from funds made available by the State.

9 “(ii) TREATMENT OF OFFSET WITH
10 RESPECT TO BINDING COMMITMENTS.—
11 Each State may reduce the amount of as-
12 sistance provided in accordance with bind-
13 ing commitments that would otherwise be
14 required under subsection (b)(3) by an
15 amount equal to the value of the offset of
16 State matching funds made pursuant to
17 this paragraph.

18 “(B) MAXIMUM OFFSET.—For each State,
19 the total amount of the offset of State matching
20 funds made pursuant to this paragraph for a
21 fiscal year may not exceed the greater of—

22 “(i) an amount equal to 2 percent of
23 the amount of the capitalization grant re-
24 ceived by the State pursuant to this sec-
25 tion; or

1 “(ii) \$100,000.

2 “(C) ASSISTANCE FOR PLANNING AND DE-
3 SIGN.—To provide assistance for a small system
4 that does not receive a loan under this title, the
5 State may use a portion of the amount referred
6 to in subparagraph (B) to provide a grant for
7 facility planning and design. The amount of the
8 grant award may not exceed 50 percent of the
9 cost of the facility planning and design.”.

10 (d) ASSISTANCE FOR DISADVANTAGED COMMU-
11 NITIES.—Subsection (h) of section 603 (33 U.S.C.
12 1383(h)) is amended to read as follows:

13 “(h) ASSISTANCE FOR DISADVANTAGED COMMU-
14 NITIES.—

15 “(1) DISADVANTAGED COMMUNITY DEFINED.
16 As used in this subsection, the term ‘disadvantaged
17 community’ means the service area of a publicly
18 owned treatment works with respect to which the av-
19 erage annual residential sewage treatment charges
20 for a user of the treatment works (referred to in this
21 subsection as ‘average annual residential user
22 charges’) is an amount greater than 1.5 percent of
23 the median household income for the service area.

24 “(2) LOAN FORGIVENESS.—In any case in
25 which the State makes a loan pursuant to subsection

1 (d)(1) to a disadvantaged community or to a com-
2 munity that the State expects to become a disadvan-
3 taged community, the State may forgive an amount
4 of the principal of the loan not to exceed the amount
5 of forgiveness required to ensure that the average
6 annual residential user charges for the service area
7 of the publicly owned treatment works that is the
8 subject of the loan does not exceed 1.5 percent of
9 the median household income for the service area.

10 “(3) GRANT OR LOAN AMOUNT.—The total
11 amount of loan forgiveness made by a State pursu-
12 ant to paragraph (2) to a disadvantaged community
13 or to a community that the State expects to become
14 a disadvantaged community may not exceed
15 \$20,000,000.

16 “(4) TOTAL AMOUNT OF LOAN FORGIVENESS.—
17 For each fiscal year, the total amount of loan for-
18 giveness made by a State pursuant to paragraph (2)
19 may not exceed 20 percent of the amount of the cap-
20 italization grant received by the State for the year.”.

21 (e) WATER POLLUTION CONTROL REVOLVING LOAN
22 FUNDS.—

23 (1) GRANTS TO CERTAIN STATES.—Section 603
24 (42 U.S.C. 1383) is amended by adding at the end
25 the following new subsection:

1 “(i) ASSISTANCE TO CERTAIN STATES.—

2 “(1) IN GENERAL.—The sums authorized to be
3 appropriated for capitalization grants under this
4 title to American Samoa, Guam, the Commonwealth
5 of the Northern Mariana Islands, the Republic of
6 Palau (pending ratification of the Compact of Free
7 Association), the United States Virgin Islands, and
8 the District of Columbia may be used for construc-
9 tion grants under title II at the request of the chief
10 executive of the entity.

11 “(2) REQUIREMENTS FOR PUBLICLY OWNED
12 TREATMENT WORKS.—

13 “(A) IN GENERAL.—Except as provided in
14 subparagraph (B), each publicly owned treat-
15 ment works that receives assistance under this
16 subsection shall be required to meet the re-
17 quirements of this Act in the same manner as
18 is required for each publicly owned treatment
19 works that receives assistance under title II.

20 “(B) EXCEPTION.—In the case of a pub-
21 licly owned treatment works in the District of
22 Columbia, the matching percentage required
23 under title II shall be 20 percent.”.

24 (2) ADMINISTRATIVE COSTS.—Section
25 603(d)(7) (33 U.S.C. 1383(d)(7)) is amended by in-

1 serting before the period at the end the following: “,
2 or, at the request of the State and with the approval
3 of the Administrator, ½ percent of the sum of the
4 total amount of the capitalization grants made to
5 the State under this title and funds deposited by the
6 State from sums made available by the State by ap-
7 propriations”.

8 (3) RESERVATION OF FUNDS.—The first sen-
9 tence of section 205(g)(1) (33 U.S.C. 1285(g)(1)) is
10 amended by striking “ending before October 1,
11 1994” and inserting “ending before October 1,
12 1997”.

13 (f) ALLOTMENT OF FUNDS.—

14 (1) IN GENERAL.—Subsection (a) of section
15 604 (33 U.S.C. 1384(a)) is amended to read as fol-
16 lows:

17 “(a) ALLOTMENT.—

18 “(1) AMOUNT ALLOTTED IN ACCORDANCE WITH
19 SECTION 205(c).—

20 “(A) IN GENERAL.—The applicable per-
21 centage of the amounts made available by ap-
22 propriation to carry out this section for each of
23 fiscal years 1995 through 2000 shall be allotted
24 by the Administrator in accordance with section
25 205(c).

1 “(B) APPLICABLE PERCENTAGE.—The ap-
 2 plicable percentage referred to in subparagraph
 3 (A) shall be—

4 “(i) 60 percent for fiscal year 1995;

5 “(ii) 40 percent for fiscal year 1996;

6 “(iii) 20 percent for fiscal year 1997;

7 and

8 “(iv) 0 percent for each of fiscal years
 9 1998 through 2000.

10 “(2) AMOUNT ALLOTTED IN ACCORDANCE WITH
 11 NEW FORMULAS.—

12 “(A) GENERAL ALLOTMENT.—

13 “(i) IN GENERAL.—The applicable
 14 percentage of the amounts made available
 15 by appropriation to carry out this section
 16 for each of fiscal years 1995 through 2000
 17 shall be allotted by the Administrator in
 18 accordance with a formula that the Admin-
 19 istrator shall establish pursuant to this
 20 subparagraph.

21 “(ii) APPLICABLE PERCENTAGE.—The
 22 applicable percentage referred to in clause
 23 (i) shall be—

24 “(I) 40 percent for fiscal year
 25 1995;

18

1 “(II) 55 percent for fiscal year
2 1996;

3 “(III) 70 percent for fiscal year
4 1997;

5 “(IV) 85 percent for fiscal year
6 1998;

7 “(V) 80 percent for fiscal year
8 1999; and

9 “(VI) 75 percent for fiscal year
10 2000.

11 “(iii) FORMULA.—

12 “(I) IN GENERAL.—Not later
13 than October 1, 1994, and every 2
14 years thereafter through October 1,
15 2000, the Administrator shall, by reg-
16 ulation, establish a formula for allot-
17 ting the amounts referred to in clause
18 (i).

19 “(II) CRITERIA FOR FORMULA.—
20 Each formula referred to in clause (i)
21 shall provide for—

22 “(aa) the allotment to each
23 State of an amount that bears
24 the same ratio to the amounts
25 made available for allotment

19

1 under this subparagraph as the
2 total amount of costs of projects
3 eligible for assistance under sec-
4 tion 603(c)(1) for the State bears
5 to the total amount of costs of
6 projects eligible for assistance
7 under section 603(c)(1) for all
8 States; and

9 “(bb) the adjustment of the
10 amounts allotted pursuant to
11 item (aa) to meet the require-
12 ments of paragraph (3).

13 “(B) ALLOTMENT FOR WATERSHED MAN-
14 AGEMENT AND PLANNING.—

15 “(i) IN GENERAL.—The applicable
16 percentage of the amounts made available
17 by appropriation to carry out this section
18 for each of fiscal years 1995 through 2000
19 shall be allotted by the Administrator for
20 watershed planning and management
21 under section 321 in accordance with a
22 formula that the Administrator shall estab-
23 lish pursuant to this subparagraph.

20

1 “(ii) APPLICABLE PERCENTAGE.—The
2 applicable percentage referred to in clause
3 (i) shall be—

4 “(I) 5 percent for fiscal year
5 1996;

6 “(II) 10 percent for fiscal year
7 1997;

8 “(III) 15 percent for fiscal year
9 1998;

10 “(IV) 20 percent for fiscal year
11 1999; and

12 “(V) 25 percent for fiscal year
13 2000.

14 “(iii) FORMULA.—

15 “(I) IN GENERAL.—Not later
16 than October 1, 1994, and every 2
17 years thereafter through October 1,
18 2000, the Administrator shall, by reg-
19 ulation, establish a formula for allot-
20 ting the amounts referred to in clause
21 (i).

22 “(II) CRITERIA FOR FORMULA.—
23 Each formula referred to in clause (i)
24 shall provide for—

21

1 “(aa) the allotment to each
2 State of an amount that bears
3 the same ratio to the amounts
4 made available for allotment
5 under this subparagraph as the
6 total amount of costs of projects
7 eligible for assistance under sec-
8 tion 603(c)(1)(F) for the State
9 bears to the total amount of
10 costs of projects eligible for as-
11 sistance under section
12 603(c)(1)(F) for all States; and

13 “(bb) the adjustment of the
14 amounts allotted pursuant to
15 item (aa) to meet the require-
16 ments of paragraph (3).

17 “(3) MINIMUM ALLOTMENT.—

18 “(A) IN GENERAL.—Except as provided in
19 subparagraph (B), the minimum percentage
20 amount of the amounts made available by ap-
21 propriation to carry out this section for each of
22 fiscal years 1995 through 2000 allotted to each
23 of the 50 States shall be ½ percent.

24 “(B) CERTAIN TERRITORIES.—

1 “(i) IN GENERAL.—A total amount
2 equal to the amount specified in clause (ii)
3 shall be allotted among the following:

4 “(I) American Samoa.

5 “(II) Guam.

6 “(III) The Commonwealth of the
7 Northern Mariana Islands.

8 “(IV) The Republic of Palau
9 (pending ratification of the Compact
10 of Free Association).

11 “(V) The United States Virgin
12 Islands.

13 “(ii) AMOUNT SPECIFIED.—The total
14 amount allotted pursuant to clause (i) shall
15 be not less than $\frac{1}{3}$ percent of the amounts
16 made available by appropriation to carry
17 out this section for each of fiscal years
18 1995 through 2000.”.

19 (2) PLANNING FUNDS.—Subsection (b) of sec-
20 tion 604 (33 U.S.C. 1384(b)) is amended to read as
21 follows:

22 “(b) RESERVATION OF FUNDS FOR PLANNING.—To
23 carry out planning under sections 205(j)(2), 303(e), and
24 321, each State shall reserve for each fiscal year the
25 greater of—

1 “(1) an amount not to exceed 3 percent of the
2 funds allotted to the State under this section for the
3 fiscal year; or

4 “(2) \$250,000.”.

5 (3) USE OF UNOBLIGATED FUNDS.—Section
6 604(c) (33 U.S.C. 1384(c)) is amended by striking
7 paragraph (2) and inserting the following new para-
8 graph:

9 “(2) USE OF UNOBLIGATED FUNDS.—

10 “(A) IN GENERAL.—Any unobligated
11 amount of any allotment to a State on the last
12 day of the 2-year period of availability estab-
13 lished under paragraph (1), shall be deposited
14 in an unobligated funds account in the Treas-
15 ury of the United States.

16 “(B) GRANTS.—Amounts in the account
17 referred to in subparagraph (A) shall be avail-
18 able to the Administrator to award grants to
19 fund 100 percent of the cost of a modification
20 or replacement of any innovative process or
21 technology funded under title II.

22 “(C) CRITERIA FOR GRANT AWARDS.—The
23 Administrator may award a grant under this
24 paragraph on the basis of a finding that the
25 process or technology has not met design per-

1 formance specifications and has significantly in-
 2 creased capitalization or operation maintenance
 3 costs, unless the failure of the process or tech-
 4 nology to meet the specifications is attributable
 5 to negligence on the part of a person.”.

6 (g) ALTERNATIVE USE OF FUNDS.—Section
 7 602(b)(3) (33 U.S.C. 1382(b)(3)) is amended by striking
 8 “120” and inserting “200”.

9 (h) AUTHORIZATION OF APPROPRIATIONS.—Section
 10 607 (33 U.S.C. 1387) is amended—

11 (1) by striking “There is authorized” and in-
 12 serting “(a) IN GENERAL.—Except as provided in
 13 subsection (b), there are authorized”;

14 (2) in subsection (a) (as so designated)—

15 (A) in paragraph (4), by striking “and” at
 16 the end;

17 (B) in paragraph (5), by striking the pe-
 18 riod at the end and inserting “; and”; and

19 (C) by adding at the end the following new
 20 paragraph:

21 “(6) \$2,500,000,000 for each of fiscal years
 22 1995 through 2000.”; and

23 (3) by adding at the end the following new sub-
 24 section:

25 “(b) DEFICIT REDUCTION.—

1 “(1) FISCAL YEARS 1996 THROUGH 1998.—If,
2 with respect to any of fiscal years 1996 through
3 1998, the estimate of the on-budget deficit contained
4 in the most recent mid-session review of the budget
5 prepared pursuant to section 1106 of title 31, United
6 States Code, does not exceed the on-budget defi-
7 cit specified for the fiscal year in section 2 of the
8 conference report to accompany House Concurrent
9 Resolution 64, setting forth the congressional budget
10 of the United States Government for fiscal years
11 1994 through 1998, as passed by the Senate on
12 April 1, 1993, the amount authorized to be appro-
13 priated under subsection (a) for the fiscal year shall
14 be increased by—

15 “(A) for fiscal year 1996, \$500,000,000;

16 “(B) for fiscal year 1997, \$1,000,000,000;

17 and

18 “(C) for fiscal year 1998, \$1,500,000,000.

19 “(2) FISCAL YEARS 1999 AND 2000.—If, with re-
20 spect to fiscal year 1999 or 2000, the estimate of
21 the on-budget deficit contained in the most recent
22 mid-session review of the budget prepared pursuant
23 to section 1106 of title 31, United States Code, does
24 not exceed the estimate for the preceding fiscal year,
25 the amount authorized to be appropriated under

1 subsection (a) for the fiscal year shall be increased
2 by—

3 “(A) for fiscal year 1999, \$2,000,000,000;

4 and

5 “(B) for fiscal year 2000,
6 \$2,500,000,000.”.

7 (i) CONSTRUCTION GRANTS.—

8 (1) AMENDMENTS TO TITLE II.—Title II (33
9 U.S.C. 1281 et seq.) is amended—

10 (A) in section 205(c)(3) (33 U.S.C.
11 1285(c)(3))—

12 (i) in the paragraph heading, by strik-
13 ing “1987–1990” and inserting “1987–2000”;

14 and

15 (ii) by striking “1987, 1988, 1989,
16 and 1990” and inserting “1987 through
17 2000”; and

18 (B) in section 218(c) (33 U.S.C. 1298(e)),
19 by striking “\$10,000,000” and inserting
20 “\$20,000,000”.

21 (2) CONSTRUCTION GRANTS.—The matter
22 under the heading “CONSTRUCTION GRANTS” under
23 the heading “ENVIRONMENTAL PROTECTION AGEN-
24 CY” in title III of the Departments of Veterans Af-
25 fairs and Housing and Urban Development, and

1 Independent Agencies Appropriations Act, 1990
 2 (Public Law 101-144; 103 Stat. 858) is amended by
 3 striking all after “Ware Shoals, South Carolina” and
 4 inserting a period.

5 **SEC. 102. STATE PROGRAM GRANTS.**

6 (a) **AUTHORIZATION OF APPROPRIATIONS.**—Section
 7 106(a) (33 U.S.C. 1256(a)) is amended—

8 (1) by inserting after “(a)” the following new
 9 subsection heading: “AUTHORIZATION OF APPRO-
 10 PRIATIONS.—”;

11 (2) in paragraph (1), by striking “and” at the
 12 end;

13 (3) in paragraph (2)—

14 (A) by inserting “and” after “1990;”;

15 (B) by striking “for grants to States” and
 16 all that follows through the end of the para-
 17 graph; and

18 (4) by adding at the end the following new
 19 paragraphs:

20 “(3) such sums as may be necessary for each
 21 of fiscal years 1991 through 1994; and

22 “(4) \$150,000,000 for each of fiscal years 1995
 23 through 2000.”.

24 (b) **STATE PROGRAM.**—Subsection (b) of section 106
 25 (33 U.S.C. 1256(b)) is amended to read as follows:

1 “(b) STATE PROGRAM.—From the sums made avail-
2 able pursuant to subsection (a), the Administrator shall
3 make grants to the States and to interstate agencies to
4 support the administration of comprehensive State water
5 pollution control programs for the prevention, reduction,
6 and elimination of water pollution, including enforcement
7 directly or through appropriate State law enforcement of-
8 ficers or agencies.”.

9 (c) ALLOTMENTS.—Subsection (c) of section 106 (33
10 U.S.C. 1256(c)) is amended to read as follows:

11 “(c) ALLOTMENTS.—

12 “(1) IN GENERAL.—Sums made available by
13 appropriation pursuant to subsection (a) for any fis-
14 cal year, other than sums reserved pursuant to para-
15 graph (2), shall be allotted to States and interstate
16 agencies on the basis of the extent of water pollution
17 problems in the respective States and the other re-
18 quirements of this section.

19 “(2) INNOVATIVE PROGRAMS.—Of the sums
20 made available by appropriation pursuant to sub-
21 section (a) for any fiscal year, an amount equal to
22 25 percent of the amount in excess of \$80,000,000
23 shall be available to the Administrator for making
24 grants to States for the support of innovative pro-
25 grams for the control and prevention of water pollu-

1 tion that have potential application to other
2 States.”.

3 (d) STATE SHARE.—Subsection (d) of section 106
4 (33 U.S.C. 1256(d)) is amended to read as follows:

5 “(d) STATE SHARE.—

6 “(1) GRANT CONDITION.—A grant made to a
7 State or interstate agency pursuant to this section
8 shall be made on the condition that the State or
9 interstate agency provide from non-Federal funds an
10 amount determined by multiplying the amount allot-
11 ted to the State or interstate agency pursuant to
12 subsection (c) by the applicable percentage specified
13 in paragraph (2).

14 “(2) APPLICABLE PERCENTAGE.—The applica-
15 ble percentage referred to in paragraph (1) shall
16 be—

17 “(A) 30 percent for fiscal year 1995;

18 “(B) 40 percent for fiscal year 1996; and

19 “(C) 50 percent for each fiscal year there-
20 after.”.

21 (e) EMERGENCY POWERS.—Section 106(e) (33
22 U.S.C. 1256(e)) is amended—

23 (1) by inserting after “(e)” the following new
24 subsection heading: “EMERGENCY POWERS.—”; and

1 (2) by striking “program—” and all that fol-
2 lows through “(2)” and inserting “program”.

3 (f) OTHER AGENCIES.—Section 106 (33 U.S.C.
4 1256) is amended by adding at the end the following new
5 subsection:

6 “(h) OTHER AGENCIES.—A State that receives a
7 grant under this section may reserve an amount equal to
8 not more than 20 percent of the amount of the grant to
9 support the participation by substate regional comprehen-
10 sive planning agencies in water quality planning activities,
11 including participation by the agencies in the development
12 and periodic revision of a continuing water quality plan-
13 ning process pursuant to section 303(e).”.

14 (g) CONFORMING AMENDMENT.—The section head-
15 ing of section 106 (33 U.S.C. 1256) is amended to read
16 as follows:

17 **“SEC. 106. GRANTS FOR POLLUTION CONTROL PROGRAM.”.**

18 **SEC. 103. GENERAL PROGRAM AUTHORIZATIONS.**

19 Section 517 (33 U.S.C. 1376) is amended—

20 (1) by striking “and” before “\$135,000,000”;
21 and

22 (2) by inserting before the period at the end the
23 following: “, such sums as may be necessary for each
24 of fiscal years 1991 through 1993, \$185,000,000 for
25 each of fiscal years 1994 and 1995, \$190,000,000

1 for each of fiscal years 1996 and 1997,
2 \$195,000,000 for each of fiscal years 1998 and
3 1999, and \$200,000,000 for fiscal year 2000.”.

4 **TITLE II—TOXIC POLLUTION**
5 **PREVENTION AND CONTROL**

6 **SEC. 201. POINT SOURCE TECHNOLOGY BASED CONTROLS.**

7 (a) **EFFLUENT GUIDELINES.**—Subsection (b) of sec-
8 tion 304 (33 U.S.C. 1314(b)) is amended to read as fol-
9 lows:

10 “(b) **EFFLUENT GUIDELINES.**—

11 “(1) **REQUIREMENTS FOR EFFLUENT GUIDE-**
12 **LINES.**—The Administrator shall, after notice and
13 opportunity for public comment, promulgate regula-
14 tions that establish effluent guidelines applicable to
15 point sources (other than publicly owned treatment
16 works) that discharge conventional, nonconventional,
17 toxic, or other pollutants to navigable waters. In
18 terms of the quantities of constituents and the
19 chemical, physical, and biological characteristics of
20 pollutants, the regulations shall—

21 “(A) reflect the application of the best
22 available technology economically achievable for
23 each category or class of sources to which the
24 effluent guideline applies;

1 “(B) for a determination of the best avail-
2 able technology economically achievable under
3 subparagraph (A), rely on, and require, to the
4 maximum extent practicable, source reduction
5 measures and practices, including changes in
6 production processes, products, or raw mate-
7 rials that reduce, avoid, or eliminate the gen-
8 eration of toxic or hazardous byproducts, taking
9 into account any adverse effects on human
10 health (including the health of workers) and the
11 environment;

12 “(C) require the elimination of the dis-
13 charge of pollutants to navigable waters in any
14 case in which the Administrator finds that the
15 elimination is technologically and economically
16 achievable for the category or class of sources
17 to which the effluent guideline applies;

18 “(D) prohibit or limit the release of pollut-
19 ants to other environmental media (including
20 ground water) to the extent that the prohibition
21 or limitation is technologically and economically
22 achievable for the category or class of sources
23 to which the effluent guideline applies; and

24 “(E) prohibit specific control measures or
25 practices that the Administrator determines are

1 likely to have a significant adverse impact on
2 any environmental medium.

3 “(2) FACTORS THAT THE ADMINISTRATOR MAY
4 CONSIDER.—In determining whether any prohibition,
5 limitation, or requirement is technologically or eco-
6 nomicly achievable for a category or class of
7 sources, the Administrator may consider, with re-
8 spect to the category or class—

9 “(A) the age of the equipment and facili-
10 ties involved;

11 “(B) the process employed;

12 “(C) the engineering aspects of the appli-
13 cation of various types of control techniques
14 and process changes (including in-plant source
15 reduction measures, in addition to end-of-pipe
16 controls);

17 “(D) the cost of achieving the limitation,
18 prohibition, or requirement; and

19 “(E) other factors that the Administrator
20 determines appropriate.”.

21 (b) NEW SOURCE PERFORMANCE STANDARDS.—

22 (1) IN GENERAL.—Paragraph (1) of section
23 306(a) (33 U.S.C. 1316(a)(1)) is amended to read
24 as follows:

1 “(1)(A) The term ‘standard of performance’ means
2 a standard for the control of the discharge of pollutants
3 that reflects the greatest degree of effluent reduction that
4 the Administrator determines to be achievable through ap-
5 plication of the best available demonstrated control tech-
6 nology, processes, operating methods, or other alter-
7 natives.

8 “(B) In determining the best available demonstrated
9 control technology, the Administrator shall—

10 “(i) rely upon and require, to the maximum ex-
11 tent practicable, source reduction measures and
12 practices, including changes in production processes,
13 products, or raw materials, that reduce, avoid, or
14 eliminate the generation of toxic or hazardous by-
15 products, taking into account any adverse effects on
16 human health (including the health of workers) and
17 the environment;

18 “(ii) eliminate the discharge of pollutants to
19 navigable waters in any case in which the Adminis-
20 trator determines that the elimination is techno-
21 logically and economically achievable for the cat-
22 egory or class of sources to which the standard
23 applies;

24 “(iii) prohibit or limit the release of pollutants
25 to other environmental media (including ground

1 water) to the extent that the prohibition or limita-
2 tion is technologically and economically achievable
3 for the category or class of sources to which the
4 standard applies; and

5 “(iv) prohibit specific control measures or prac-
6 tices that the Administrator determines are likely to
7 have a significant adverse impact on any environ-
8 mental medium.”.

9 (2) STANDARDS.—Section 306 (33 U.S.C.
10 1316) is amended—

11 (A) in subsection (b)(1)(B), by striking the
12 last 3 sentences; and

13 (B) by adding at the end the following new
14 subsection:

15 “(f) Each standard of performance established pursu-
16 ant to this section (including any revised standard estab-
17 lished pursuant to this section) shall become effective on
18 the date of proposal of the standard and shall apply to
19 all sources for which construction begins after the date
20 of proposal.”.

21 (c) PRETREATMENT STANDARDS.—

22 (1) IN GENERAL.—Subsection (b) of section
23 307 (33 U.S.C. 1317(b)) is amended to read as fol-
24 lows:

25 “(b) PRETREATMENT STANDARDS.—

1 “(1) IN GENERAL.—The Administrator shall,
2 after notice and opportunity for public comment,
3 promulgate regulations establishing pretreatment
4 standards for the introduction of toxic and
5 nonconventional pollutants into any treatment works
6 (as defined in section 212) that is publicly owned.
7 The regulations promulgated under this section
8 shall—

9 “(A) address each pollutant subject to an
10 effluent guideline under section 301 or 304 for
11 sources in the same class or category; and

12 “(B) be established to prevent the dis-
13 charge of any pollutant through the treatment
14 works, including pollutants that interfere with,
15 pass through, or prevent the beneficial reuse of,
16 or cause or contribute to the contamination of,
17 sewage sludge, or are otherwise incompatible
18 with, the treatment works.

19 “(2) REQUIREMENTS FOR PRETREATMENT
20 STANDARDS.—Each pretreatment standard shall—

21 “(A) reflect the application of the best
22 available technology economically achievable for
23 the category or class of sources to which the
24 standard applies;

1 “(B) in determining the best available
2 technology economically achievable under sub-
3 paragraph (A), rely upon and require, to the
4 maximum extent practicable, source reduction
5 measures and practices, including changes in
6 production processes, products, or raw mate-
7 rials that reduce, avoid, or eliminate the gen-
8 eration of toxic or hazardous byproducts, taking
9 into account any adverse effects on human
10 health (including the health of workers) and the
11 environment;

12 “(C) provide for the elimination of the in-
13 troduction of pollutants into any treatment
14 works in any case in which the Administrator
15 determines that the elimination is techno-
16 logically and economically achievable for the
17 category or class of sources to which the stand-
18 ard applies;

19 “(D)(i) prohibit or limit the release of pol-
20 lutants to other environmental media (including
21 ground water) to the extent that the prohibition
22 or limitation is technologically or economically
23 achievable for the category or class of sources
24 to which the standard applies; and

1 “(ii) prohibit specific control measures or
2 practices that the Administrator determines are
3 likely to have a significant adverse impact on
4 any environmental medium; and

5 “(E) be no less stringent than any effluent
6 guideline for the pollutants (other than any
7 conventional pollutant) and the category or
8 class of sources promulgated under section
9 304(b).

10 “(3) DESIGNATION OF CATEGORIES.—When
11 proposing or promulgating any pretreatment stand-
12 ard under this section, the Administrator shall des-
13 ignate the category or class of sources to which the
14 standard shall apply.

15 “(4) STATUTORY CONSTRUCTION.—Nothing in
16 this subsection is intended to affect any
17 pretreatment requirement established by the law (in-
18 cluding any regulation) of a State or a political sub-
19 division of a State, or a policy of a State or a politi-
20 cal subdivision of a State, that is more stringent
21 than any pretreatment standard for a pollutant,
22 other than a conventional pollutant, established
23 under this subsection.

24 “(5) COMPLIANCE DATE.—Each pretreatment
25 standard promulgated under this section shall speci-

1 fy a date for compliance as expeditiously as prac-
2 ticable, but not later than 3 years after the date on
3 which the standard is promulgated.”.

4 (2) SIMULTANEOUS PROMULGATION.—Section
5 307(c) (33 U.S.C. 1317(c)) is amended—

6 (A) by inserting “STANDARDS RE-
7 QUIRED.—” after “(c)”;

8 (B) by striking “In order to ensure” and
9 inserting the following:

10 “(1) NEW SOURCES.—In order to ensure”;

11 (C) by striking the last sentence of the
12 subsection and inserting the following new
13 paragraph:

14 “(2) REQUIREMENTS FOR PRETREATMENT
15 STANDARDS.—A pretreatment standard referred to
16 in paragraph (1) shall—

17 “(A) comply with the requirements of sub-
18 section (b)(1), and may be more stringent than
19 a standard promulgated under such subsection
20 for existing sources; and

21 “(B) be no less stringent than any stand-
22 ard of performance promulgated under section
23 306 for the pollutants (other than conventional
24 pollutants) and category or class of sources to
25 which the pretreatment standard applies.”.

1 (d) CONFORMING AMENDMENTS.—Section 301(b)
2 (33 U.S.C. 1311(b)) is amended—

3 (1) in paragraph (1)—

4 (A) in subparagraph (C), by striking “not
5 later than July 1, 1977” and inserting “as ex-
6 peditiously as practicable, but not later than 3
7 years after the date the limitation is issued”;
8 and

9 (B) by adding after subparagraph (C) the
10 following new sentence:

11 “A permit issued under section 402 may not contain
12 a compliance schedule for a limitation referred to in
13 subparagraph (C) if the compliance schedule is pre-
14 cluded by any State law (including any regulation)
15 or if the permit has previously included a limitation
16 applicable to the pollutant.”;

17 (2) in paragraph (2)—

18 (A) in subparagraph (A), by striking “sec-
19 tion 304(b)(2) of this Act” both places it ap-
20 pears and inserting “section 304(b)”;

21 (B) in subparagraphs (C) through (F), by
22 striking “, and in no case later than March 31,
23 1989” each place it appears; and

1 (C) in subparagraph (E), by striking “sec-
2 tion 304(b)(4) of this Act” and inserting “sec-
3 tion 304(b)”;

4 (3) in paragraph (3)(A), by striking “, and in
5 no case later than March 31, 1989”.

6 (e) SCHEDULE FOR GUIDELINES AND STANDARDS.—

7 (1) IN GENERAL.—Subsection (d) of section
8 301 (33 U.S.C. 1311(d)) is amended to read as fol-
9 lows:

10 “(d) REVISION OF EFFLUENT GUIDELINES.—

11 “(1) IN GENERAL.—Any effluent guideline (and
12 each related requirement, including any limitation)
13 required pursuant to subsection (b)(2) or promul-
14 gated under section 304(b) shall be reviewed in ac-
15 cordance with the schedule established under section
16 304(m).

17 “(2) REVISION OF GUIDELINE.—If, in the judg-
18 ment of the Administrator, there have been signifi-
19 cant changes in factors pertaining to the guidelines,
20 including advances in pollution control technology or
21 source reduction practices, that are likely to achieve
22 a significant reduction in the toxicity of pollutants
23 discharged to navigable waters by sources in the cat-
24 egory or class of sources to which an effluent guide-

1 line applies, the Administrator shall revise the guide-
2 line.

3 “(3) SIMULTANEOUS REVIEW AND REVISION.—
4 At the same time as the Administrator reviews or re-
5 vises an effluent guideline (or related requirement)
6 pursuant to this subsection, the Administrator shall
7 review or revise new source performance standards
8 promulgated pursuant to section 306 and
9 pretreatment standards for existing sources and new
10 sources promulgated pursuant to section 307 for
11 sources in the class or category of sources.”.

12 (2) PLAN FOR REVIEW.—Section 304(m) (33
13 U.S.C. 1314(m)) is amended—

14 (A) in paragraph (1)—

15 (i) by striking “(1)” and all that fol-
16 lows through “biennially” and inserting the
17 following:

18 “(1) PUBLICATION.—Not later than January 1,
19 1998, and every 5 years”;

20 (ii) in subparagraph (A)—

21 (I) by striking “annual”; and

22 (II) by inserting before the semi-
23 colon the following: “, new source per-
24 formance standards promulgated in
25 accordance with section 306, and

43

1 pretreatment standards for existing
 2 sources and new sources promulgated
 3 pursuant to section 307”;

4 (iii) in subparagraph (B)—

5 (I) by striking “discharging toxic
 6 or nonconventional pollutants”;

7 (II) by striking “(b)(2)” and in-
 8 serting “(b)”;

9 (III) by striking “section 306”
 10 and inserting “sections 306 and 307”;
 11 and

12 (iv) in subparagraph (C), by striking
 13 “3 years after the publication of the plan”
 14 and inserting “5 years after the publica-
 15 tion of the plan”;

16 (B) by adding at the end the following new
 17 paragraphs:

18 “(3) REVIEW OF INDIRECT DISCHARGE STAND-
 19 ARDS.—

20 “(A) IN GENERAL.—Except as provided in
 21 subparagraph (B), notwithstanding section
 22 301(d) and any other requirement of this sub-
 23 section, the Administrator shall, as part of the
 24 plan required to be developed by the Adminis-
 25 trator pursuant to this subsection by January

1 1, 1998, assess standards for existing sources
2 and new sources developed pursuant to section
3 307 and identify, with respect to each standard
4 applicable to pollutants that do not biodegrade,
5 any requirements of the standard that are less
6 stringent than the requirements under this sec-
7 tion and sections 301 and 306.

8 “(B) EXCEPTION.—Subparagraph (A) may
9 not apply with respect to a category or sub-
10 category of industrial sources with respect to
11 which no facility would be affected by a stand-
12 ard promulgated pursuant to section 307.

13 “(4) SIMULTANEOUS PUBLICATION.—

14 “(A) IN GENERAL.—Except as provided in
15 subparagraph (B), notwithstanding any other
16 provision of this Act, at the same time as the
17 Administrator promulgates and publishes efflu-
18 ent guidelines pursuant to section 301 and this
19 section, the Administrator shall, for each indus-
20 try that is covered by guidelines promulgated
21 pursuant to such sections, promulgate and
22 publish—

23 “(i) standards for new sources pursu-
24 ant to section 306; and

1 “(ii) pretreatment standards for exist-
2 ing sources and new sources pursuant to
3 section 307.

4 “(B) EXCEPTION.—If, with respect to the
5 pretreatment standards for existing sources re-
6 ferred to in subparagraph (A)(ii), no facility
7 would be affected by the standards, the require-
8 ments of such subparagraph may not apply
9 with respect to the existing sources.”.

10 (3) CONFORMANCE WITH CONSENT DECREE.—
11 Nothing in this Act or the amendments made by this
12 Act is intended to relieve the Administrator of any
13 requirements or obligations of the Administrator
14 under the settlement decree in *Natural Resources*
15 *Defense Council v. Reilly*, Civ. No. 89-2980 (D.D.C.
16 filed January 25, 1991).”.

17 (f) FEES.—Section 308 (33 U.S.C. 1318) is amended
18 by adding at the end the following new subsection:

19 “(e) FEES FOR ISSUANCE OF GUIDELINES AND
20 STANDARDS.—

21 “(1) IN GENERAL.—The Administrator shall,
22 not later than the date of the promulgation or revi-
23 sion of any—

1 “(A) effluent limitation or guideline pro-
2 mulgated under section 301(b) and section
3 304(b);

4 “(B) new source performance standard
5 promulgated under section 306; or

6 “(C) pretreatment standard promulgated
7 under subsections (b) and (c) of section 307,
8 identify the cost incurred by the Administrator in
9 developing the guideline or standard.

10 “(2) FEES.—The Administrator shall assess the
11 owner or operator of any facility with a permit is-
12 sued pursuant to section 402, or an individual con-
13 trol mechanism issued under section 307(b), and
14 regulated by a guideline or standard referred to in
15 paragraph (1) a fee in an amount equal to a propor-
16 tional share of the estimated cost referred to in
17 paragraph (1). The total amount of fees assessed
18 with respect to a guideline or standard shall be suffi-
19 cient to offset the full cost of developing and pub-
20 lishing the guideline or standard.

21 “(3) MODIFICATION OR WAIVER.—The Admin-
22 istrator may modify or waive an assessment de-
23 scribed in paragraph (2) on the basis of a finding
24 that—

1 “(A) a source is a small business, as de-
2 fined in section 3(a) of the Small Business Act
3 (15 U.S.C. 632); or

4 “(B) the assessment would pose an unrea-
5 sonable financial hardship for the source.

6 “(4) OTHER CONDITIONS FOR MODIFICATION.—
7 The Administrator may modify an assessment de-
8 scribed in paragraph (2) if the Administrator deter-
9 mines that the source will demonstrate new or inno-
10 vative technology.

11 “(5) SPECIAL FUND.—An amount equal to the
12 amount of assessments collected pursuant to this
13 subsection shall be placed in a special fund of the
14 United States Treasury and shall be available with-
15 out appropriation only to carry out the activities of
16 the Administrator relating to the development and
17 promulgation of effluent guidelines, new source per-
18 formance standards, and pretreatment standards
19 under this Act.

20 “(6) LIABILITY FOR ASSESSMENT.—

21 “(A) IN GENERAL.—Any discharger that—

22 “(i) applies for a permit to operate
23 pursuant to an effluent guideline for which
24 the Administrator made assessments under
25 this subsection; and

1 “(ii) should have paid an assessment
2 referred to in clause (i),
3 shall be liable for the assessment at the time
4 the permit application is filed and shall be sub-
5 ject to a penalty in an amount equal to not less
6 than 50 percent of the assessment, plus interest
7 computed in the same manner as under section
8 6621(a)(2) of the Internal Revenue Code of
9 1986 (relating to computation of interest on
10 underpayment of Federal taxes).

11 “(B) DEPOSIT IN FUND.—An amount
12 equal to the amount of any assessments, pen-
13 alties, and interest collected pursuant to this
14 paragraph shall be placed in the fund estab-
15 lished under paragraph (5).”.

16. **SEC. 202. WATER QUALITY CRITERIA AND STANDARDS.**

17 (a) **CRITERIA DOCUMENTS.**—Section 304(a) (33
18 U.S.C. 1314(a)) is amended—

19 (1) in paragraph (1)(A), by striking the semi-
20 colon at the end and inserting “and the sediment as-
21 sociated with the bodies of water; and”;

22 (2) in paragraph (2)—

23 (A) by striking “and” at the end of sub-
24 paragraphs (B) and (C); and

1 (B) by striking the period at the end of the
2 paragraph and inserting “; and (E) for toxic
3 pollutants, on numerical pollutant concentration
4 criteria that are sufficient to ensure the attain-
5 ment of designated uses established by a
6 State.”;

7 (3) in paragraph (4)—

8 (A) by inserting “(A)” after “(4)”;

9 (B) in the first sentence, by striking “fecal
10 coliform, and pH” and inserting “pathogens or
11 indicators of pathogens (or both), pH, oil, and
12 grease”; and

13 (C) by adding at the end the following new
14 subparagraph:

15 “(B) Not later than 3 years after the date of enact-
16 ment of this subparagraph, the Administrator shall pub-
17 lish criteria pursuant to paragraph (1)—

18 “(i) for those pollutants or factors that the Ad-
19 ministrator determines pose the greatest risk to the
20 physical, chemical, or biological integrity of waters
21 from all nonpoint sources; and

22 “(ii) that, on the basis of the potential for im-
23 proving water quality and enhancing the protection
24 of aquatic life and wildlife, programmatic needs, or
25 effectiveness, would provide the greatest benefit in

1 the restoration and protection of the physical, chemi-
2 cal, and biological integrity of waters, including, at
3 a minimum, nutrients, suspended solids, and dis-
4 solved oxygen.”;

5 (4) by striking paragraph (5) and inserting the
6 following new paragraph:

7 “(5)(A) Not later than 2 years after the date of en-
8 actment of the Water Pollution Prevention and Control
9 Act of 1993, and every 5 years thereafter, the Adminis-
10 trator shall prepare and publish in the Federal Register
11 a plan for the development of criteria and information pur-
12 suant to this subsection during the 5-year period begin-
13 ning on the date of publication of the plan, and, after pro-
14 viding opportunity for public review and comment, submit
15 the plan to Congress.

16 “(B) Each plan prepared pursuant to this paragraph
17 shall identify the relative need for new or revised—

18 “(i) human health criteria;

19 “(ii) aquatic life criteria for fresh waters and
20 waters of the estuarine zone, the territorial sea, the
21 contiguous zone, and the ocean;

22 “(iii) sediment quality criteria;

23 “(iv) criteria for pollutants associated with
24 nonpoint sources of pollution;

1 “(v) criteria for pollutants associated with
2 lakes;

3 “(vi) ground water criteria;

4 “(vii) biological, physical, and habitat criteria;
5 and

6 “(viii) ambient toxicity criteria.

7 “(C) Each plan prepared pursuant to this paragraph
8 shall establish a schedule for the publication of final cri-
9 teria that the Administrator determines would result in
10 the greatest benefit to human health and the environment.

11 “(D) The initial plan published pursuant to this para-
12 graph shall provide for the publication, not later than 4
13 years after the date of enactment of this subparagraph,
14 of not fewer than 8 sediment quality criteria (including
15 criteria for polychlorinated biphenyls and dioxins) that the
16 Administrator determines would result in the greatest ben-
17 efit to human health or the environment.”;

18 (5) in paragraph (6), by striking “and annually
19 thereafter, for purposes of section 301(h) of this
20 Act” and inserting “and every 5 years thereafter”;
21 and

22 (6) by adding at the end the following new
23 paragraphs:

24 “(9) Beginning on the date that is 1 year after the
25 date of enactment of this paragraph, the Administrator

1 shall, not later than the date of registration or reregistra-
2 tion of a pesticide pursuant to the Federal Insecticide,
3 Fungicide, and Rodenticide Act (7 U.S.C. 136 et seq.),
4 require the registrant to provide information sufficient to
5 publish criteria pursuant to paragraph (1) for the pes-
6 ticide, unless the Administrator determines, on the basis
7 of the proposed use of the pesticide, that it is unlikely that
8 the pesticide or any metabolite of the pesticide will enter
9 surface water. This paragraph may not apply with respect
10 to any data submitted for a registration or reregistration
11 that the Administrator determines was complete on or be-
12 fore June 1, 1993.

13 “(10) Not later than 1 year after the date of enact-
14 ment of this paragraph, the Administrator shall establish
15 a policy to ensure that information necessary to publish
16 criteria pursuant to this subsection for chemical sub-
17 stances that are the subject of a premanufacture notice
18 pursuant to section 5 of the Toxic Substances Control Act
19 (15 U.S.C. 2604) shall be submitted to the Administrator,
20 unless the Administrator finds that the chemical
21 substance—

22 “(A) will not be discharged to navigable waters
23 or to a publicly owned treatment works; or

24 “(B) will be discharged from a negligible quan-
25 tity of facilities.”.

1 (b) WATER QUALITY STANDARDS.—Section 303 (33
2 U.S.C. 1313) is amended—

3 (1) by striking subsections (a) and (b);

4 (2) by redesignating subsection (c) as sub-
5 section (a);

6 (3) by redesignating subsections (d) through (h)
7 as subsections (c) through (g); and

8 (4) in subsection (a) (as redesignated by para-
9 graph (2))—

10 (A) in second sentence of paragraph (1),
11 by inserting after “Results of such review” the
12 following: “(including the designated uses for
13 the navigable waters involved, the water quality
14 criteria for the waters based on the uses, and
15 the antidegradation policy of the State)”;

16 (B) in paragraph (2)—

17 (i) in subparagraph (A)—

18 (I) in the second sentence, by in-
19 serting “and antidegradation policy”
20 after “designated uses”;

21 (II) in the third sentence, by in-
22 serting “and sediment” after “en-
23 hance the quality of water”; and

24 (III) in the fourth sentence, by
25 striking “their use and value” and in-

1 serting “the criteria developed under
2 section 304(a), the use of the water
3 and sediment, and the value”; and
4 (ii) by adding at the end the following
5 new subparagraph:

6 “(C) Not later than 3 years after the date of enact-
7 ment of this subparagraph, each State shall adopt, as part
8 of the water quality standards of the State, a methodology
9 that allows the State to translate a narrative water quality
10 standard into a specific numeric limit for those pollutants
11 for which criteria guidance have not been published or for
12 which the State has not adopted numeric criteria pursuant
13 to section 304(a). In carrying out the preceding sentence,
14 the State shall use the provision or methodology for the
15 pollutants that cause water quality impairments.”;

16 (C) by striking paragraphs (3) and (4);
17 and

18 (D) by adding at the end the following new
19 paragraphs:

20 “(3)(A) Each use designation made under this para-
21 graph shall apply to the designated water and to the
22 aquatic sediments of the water.

23 “(B) Not later than 3 years after the date of enact-
24 ment of paragraph (5), and as part of any subsequent tri-
25 ennial review of State water quality standards, each State

1 shall report to the Administrator the designated uses of
2 waters within the State.

3 “(C) On the date that is 5 years after the date of
4 enactment of paragraph (5), all waters of the United
5 States for which a use has not been designated shall be
6 deemed to be designated as fishable and swimmable, un-
7 less a State establishes an alternative use for the waters.

8 “(4) Any chemical-specific numeric criterion pub-
9 lished pursuant to section 304(a) for a toxic pollutant
10 after the date of enactment of paragraph (5) (together
11 with the appropriate designated use) shall be deemed to
12 be the applicable standard under this section for all waters
13 unless a State objects to the application of the criterion
14 with respect to the waters of the State not later than 120
15 days after the date of publication of the criterion. If a
16 State objects to the application of the criterion by the date
17 specified in the preceding sentence, and the State adopts
18 a criterion by not later than 3 years after publication of
19 the criterion, the criterion may not apply with respect to
20 the State.

21 “(5)(A) For all waters of the State, after the date
22 of enactment of this paragraph, as expeditiously as prac-
23 ticable, but not later than 3 years after the date of publi-
24 cation of the criteria, each State shall adopt pollutant spe-
25 cific standards for any pollutant for which criteria are

1 published pursuant to section 304(a)(1) the discharge or
2 presence of which in the affected waters could reasonably
3 be expected to interfere with those designated uses adopt-
4 ed by the State, as necessary to support the designated
5 uses.

6 “(B) A State may waive the obligation to adopt a
7 standard pursuant to this paragraph for criteria that
8 apply as standards pursuant to paragraph (4).”.

9 (c) ANTIDegradation.—Section 303 (33 U.S.C.
10 1313), as amended by subsection (b), is further amended
11 by inserting after subsection (a) the following new sub-
12 section:

13 “(b) ANTIDegradation Policy.—

14 “(1) IN GENERAL.—Each State shall develop
15 and implement a statewide antidegradation policy
16 and implementation procedures for the policy. The
17 Administrator shall review and approve or dis-
18 approve the policy and any revisions to the policy
19 adopted by each State. Not later than 3 years after
20 the date of enactment of this paragraph, the Admin-
21 istrator shall promulgate and implement an
22 antidegradation policy for each State that does not
23 have a policy that has been approved by the Admin-
24 istrator by the date.

1 “(2) ANTIDEGRADATION POLICY IMPLEMENTA-
2 TION METHODS.—The methods for the implementa-
3 tion of an antidegradation policy under paragraph
4 (1) shall, at a minimum, be consistent with the fol-
5 lowing:

6 “(A) Existing instream water uses, includ-
7 ing any uses occurring on or after November
8 28, 1975, and the water and sediment quality
9 necessary to protect the existing uses, shall be
10 maintained and protected.

11 “(B)(i) Except as provided in clause (ii), if
12 the quality of waters and sediments exceeds lev-
13 els necessary to support the protection and
14 propagation of a balanced population of fish,
15 shellfish, and wildlife, and recreation in and on
16 the water, the quality shall be maintained and
17 protected.

18 “(ii) If the State finds, after public notice,
19 opportunity for public hearing, and full satisfac-
20 tion of the intergovernmental coordination pro-
21 visions of the continuing planning process of
22 the State, that allowing a reduction in the de-
23 gree of water quality or sediment quality is nec-
24 essary to accommodate important economic or
25 social development in the area in which the wa-

1 ters are located, clause (i) may not apply. In al-
2 lowing a reduction in the degree of water qual-
3 ity or sediment quality, the State shall ensure
4 a degree of water and sediment quality ade-
5 quate to protect existing uses (as described in
6 subparagraph (A)), and the State shall
7 ensure—

8 “(I) that all point sources discharging
9 to the waters, and each industrial user dis-
10 charging to a publicly owned treatment
11 works discharging to the waters for which
12 the level of water or sediment quality is to
13 be reduced, are subject to all applicable re-
14 quirements of this Act, including any
15 source reduction requirements established
16 pursuant to section 301, 304, 306, 307, or
17 401; and

18 “(II) that all nonpoint sources within
19 the State that affect or may affect the
20 water or sediment quality referred to in
21 subclause (I) are subject to enforceable
22 best management practices pursuant to
23 section 319 that are economically and tech-
24 nologically achievable for the sources.

1 “(3) OUTSTANDING NATIONAL RESOURCE WA-
2 TERS.—

3 “(A) IN GENERAL.—If a high quality
4 water constitutes an outstanding national re-
5 source (as described in subparagraph (B)), the
6 water shall be maintained and protected by the
7 State.

8 “(B) STATE DESIGNATION OF OUTSTAND-
9 ING NATIONAL RESOURCE WATERS.—

10 “(i) IN GENERAL.—Not later than 2
11 years after the date of enactment of this
12 clause, each State shall designate and im-
13 plement a program to protect all outstand-
14 ing national resource waters within the
15 State.

16 “(ii) OUTSTANDING NATIONAL RE-
17 SOURCE WATERS.—Except as provided in
18 clause (iii), the outstanding national re-
19 source waters shall include all waters with-
20 in a national park, wildlife refuge, wild and
21 scenic river system, national forest, wilder-
22 ness area, national seashore or lakeshore,
23 or national monument. The State shall also
24 designate as outstanding national resource
25 waters those waters of exceptional rec-

1 reational, cultural, or ecological signifi-
2 cance, including any water that supports a
3 population of threatened or endangered
4 species, as identified in the guidance of the
5 Administrator published pursuant to sub-
6 paragraph (C).

7 “(iii) DECISION TO DECLINE TO MAKE
8 A DESIGNATION.—A State may propose
9 not to designate a specific water as an out-
10 standing national resource water, and the
11 Administrator may, after notice and oppor-
12 tunity for comment, approve the proposal,
13 if—

14 “(I) the State demonstrates to
15 the satisfaction of the Administrator
16 that the continued designation would
17 result in important social and eco-
18 nomic harms; and

19 “(II) with respect to waters with-
20 in Federal lands (if any), the Federal
21 manager of the lands concurs with the
22 State proposal.

23 “(C) GUIDANCE.—Not later than 1 year
24 after the date of enactment of this subpara-
25 graph, the Administrator shall publish guidance

1 for States to assist in the designation and protection of outstanding national resource waters
2 of ecological, cultural, or recreational significance.
3
4

5 “(D) CONSEQUENCES OF FAILURE TO
6 DESIGNATE.—If the State fails to make the
7 designations required under this paragraph by
8 the date that is 3 years after the date of enactment of this subparagraph, the Administrator
9 shall make the designations on such date.
10

11 “(E) STATE ANTIDegradation POLICY.—
12 Each State antidegradation policy developed
13 under this subsection shall ensure that each
14 water of ecological significance designated pursuant to the guidance of the Administrator (including any water of ecological significance that
15 may have been designated as an outstanding
16 national resource water under this paragraph)
17 meets water and sediment quality standards
18 that ensure the protection and propagation of a
19 balanced population of fish, shellfish, and wildlife, and recreation in and on the water.
20
21
22

23 “(F) CITIZEN PETITION.—The State shall
24 include in the antidegradation policy of the
25 State provisions allowing any citizen of the

1 State to petition the State for the designation
2 of a particular water as an outstanding national
3 resource water.

4 “(4) ANTIDegradation REVIEW.—In order to
5 ensure that the antidegradation policy required by
6 this subsection is not violated, a permitting author-
7 ity shall conduct an antidegradation review for a
8 water prior to issuing any permit to a point source
9 authorizing any new, expanded, or increased dis-
10 charge of a pollutant to the receiving water.”.

11 (d) MIXING ZONES.—Section 303 (33 U.S.C. 1313),
12 as amended by subsection (b), is further amended by add-
13 ing at the end the following new subsection:

14 “(h) MIXING ZONES.—

15 “(1) NATIONAL POLICY.—The Administrator
16 shall, not later than 2 years after the date of enact-
17 ment of this paragraph, establish a national policy
18 concerning the use of mixing zones.

19 “(2) REQUIREMENTS FOR POLICY.—The policy
20 established under paragraph (1) shall, at a mini-
21 mum, require that—

22 “(A) no acute toxicity will result from the
23 allowed dilution;

1 “(B) any area of allowed dilution shall be
2 as small as possible and be in a shape that fa-
3 cilitates monitoring;

4 “(C) the area of allowed dilution is cal-
5 culated on the assumption of water volume at
6 minimum stream flow for the receiving water;
7 and

8 “(D) no mixing zone is allowed in waters
9 designated as outstanding national resource wa-
10 ters pursuant to subsection (g)(3).

11 “(3) STATE POLICIES.—Not later than 3 years
12 after the date of enactment of this paragraph, each
13 State shall incorporate in the water quality stand-
14 ards issued by the State a mixing zone policy that
15 is not less stringent than the national policy estab-
16 lished under this subsection.”.

17 (e) CONFORMING AMENDMENT.—Section 24 of the
18 Municipal Wastewater Treatment Construction Grant
19 Amendments of 1981 (33 U.S.C. 1313a) is amended by
20 striking “303(c)” both places it appears and inserting
21 “303(a)”.

22 **SEC. 203. TOXIC POLLUTANT PHASE-OUT.**

23 (a) EFFLUENT PROHIBITION.—Section 307(a) (33
24 U.S.C. 1317(a)) is amended—

1 (1) in paragraph (2), by striking the second
2 sentence and all that follows through the end of the
3 paragraph; and

4 (2) by striking paragraphs (3) through (7) and
5 inserting the following new paragraphs:

6 “(3)(A) Not later than 1 year after the publication
7 of a list pursuant to paragraph (4), the Administrator
8 shall, by regulation, prohibit the discharge of any toxic
9 pollutant listed pursuant to paragraph (4). The regulation
10 shall apply to any discharges regulated pursuant to section
11 402 or an industrial user regulated pursuant to subsection
12 (b).

13 “(B) Each regulation issued pursuant to this para-
14 graph shall specify acceptable analytical methods and a
15 compliance level.

16 “(C) The regulation shall provide a process for the
17 Administrator to adjust a prohibition pursuant to this
18 paragraph to provide an offset for the amount of a prohib-
19 ited pollutant in the water supply of the source in a man-
20 ner consistent with section 129 of title 40, Code of Federal
21 Regulations (as in effect on October 1, 1993).

22 “(D) The Administrator may exempt a category of
23 sources from the requirements of this paragraph if the Ad-
24 ministrator determines that compliance by the category

1 with the requirements of such paragraph is not techno-
2 logically feasible.

3 “(4) Not later than 2 years after the date of enact-
4 ment of the Water Pollution Prevention and Control Act
5 of 1993, and every 5 years thereafter, the Administrator
6 shall publish proposed regulations listing those pollutants
7 that the Administrator determines to—

8 “(A) be highly toxic or toxic and highly
9 bioaccumulative; and

10 “(B) occur in surface water predominately as a
11 result of discharges.

12 “(5)(A) On receiving a petition from any person, the
13 Administrator may add a pollutant to the list established
14 pursuant to paragraph (4). Each person who petitions for
15 the listing of an additional pollutant pursuant to this para-
16 graph shall submit to the Administrator sufficient infor-
17 mation to make a determination under paragraph (4) not
18 later than 1 year before the date specified in paragraph
19 (4) for the publication of a list. The Administrator shall
20 include in a notice in the Federal Register concerning the
21 establishment of the list the basis for the decision of the
22 Administrator to list or decline to list a pollutant ad-
23 dressed in a petition submitted to the Administrator pur-
24 suant to this paragraph.

1 “(B) If, on receipt of a petition referred to in sub-
2 paragraph (A), the Administrator determines that the ad-
3 dition of a pollutant to the list is warranted, but that—

4 “(i) the immediate proposal and timely promul-
5 gation of a final regulation listing the pollutant in
6 accordance with this subsection is precluded by other
7 actions under this subsection concerning the listing
8 of a pollutant; and

9 “(ii) expeditious progress is being made to list
10 pollutants pursuant to this subsection, with respect
11 to which the listing requirements of this subsection
12 are no longer appropriate,

13 the Administrator shall promptly publish the determina-
14 tion in the Federal Register, together with a description
15 and evaluation of the reasons and the data on which the
16 determination is based.

17 “(6)(A) Each toxic pollutant prohibition established
18 pursuant to this subsection shall take effect as expedi-
19 tiously as practicable but not later than 5 years after the
20 date of promulgation of the regulation establishing a pro-
21 hibition under this subsection.

22 “(B) If, at the end of the maximum compliance pe-
23 riod under subparagraph (A), the Administrator deter-
24 mines for a source or category of sources that—

1 “(i) a prohibited pollutant cannot be eliminated
2 through the use of alternative substances or proc-
3 esses; and
4 “(ii) the source is making the maximum use of
5 available technology,
6 the Administrator may extend the compliance period for
7 the source or category of sources for a period of 5 years,
8 and may on the termination of the period, on the basis
9 of the criteria referred to in clauses (i) and (ii), extend
10 the compliance period for the period specified in this sub-
11 paragraph.”.

12 (b) LISTING PROCESS.—Section 307(a)(1) (33
13 U.S.C. 1317(a)(1)) is amended—

14 (1) by striking the second sentence and insert-
15 ing the following new sentence: “The Administrator
16 is authorized to add or remove from the list any pol-
17 lutant and shall, not later than 1 year after the date
18 of enactment of the Water Pollution Prevention and
19 Control Act of 1993, and not less often than every
20 5 years thereafter, review and revise the list.”; and

21 (2) in the third sentence, by inserting “poten-
22 tial for bioaccumulation,” after “degradability,”.

23 (c) REPORT ON DEVELOPMENTAL EFFECTS.—Not
24 later than 3 years after the date of enactment of this Act,
25 the Administrator shall submit to Congress a report pro-

1 viding a comprehensive review and assessment of the ef-
2 fects of pollutants found in navigable waters on the devel-
3 opment of aquatic species, wildlife, and humans, including
4 impairments to reproduction, endocrine, and immune sys-
5 tems caused by the pollutants.

6 **SEC. 204. PRETREATMENT PROGRAM.**

7 (a) PERMIT AUTHORITY.—Section 402(b)(9) (33
8 U.S.C. 1342(b)(9)) is amended by adding at the end the
9 following new sentences: “The Administrator (or a State
10 with authority to approve a pretreatment program under
11 this Act) may impose requirements on industrial users
12 that introduce pollutants into publicly owned treatment
13 works and that are not subject to the requirements of a
14 pretreatment program that has been approved by the ap-
15 propriate authority (referred to in this paragraph as an
16 ‘approved pretreatment program’). The requirements shall
17 include requirements that are equivalent to the require-
18 ments that a publicly owned treatment works with an ap-
19 proved pretreatment program is required to impose pursu-
20 ant to the regulations issued under this Act, shall include
21 pretreatment standards, and may reflect best professional
22 judgment.”.

23 (b) REMOVAL CREDITS.—Section 307(b) (33 U.S.C.
24 1317(b)), as amended by section 201(c)(1), is further

1 amended by adding at the end the following new para-
2 graph:

3 “(6) If in the case of any toxic pollutant listed pursu-
4 ant to subsection (a) introduced by a source into a publicly
5 owned treatment works—

6 “(A) the treatment by the treatment works re-
7 sults in the biodegradation of the toxic pollutant, as
8 determined by the Administrator;

9 “(B) the discharge from the treatment works
10 does not violate the effluent limitation or standard
11 that would be applicable to the toxic pollutant if the
12 pollutant were discharged by the source other than
13 through a publicly owned treatment works; and

14 “(C) the toxic pollutant does not prevent sludge
15 use or disposal by the treatment works in accord-
16 ance with section 405,

17 the pretreatment requirements for the sources actually
18 discharging the toxic pollutant into the publicly owned
19 treatment works may be revised by the owner or operator
20 of the works to reflect the biodegradation of the toxic pol-
21 lutant by the works.”.

22 (c) DOMESTIC SEWAGE EXCLUSION.—Section 307
23 (33 U.S.C. 1317) is amended by adding at the end the
24 following new subsection:

25 “(f) DOMESTIC SEWAGE EXCLUSION.—

1 “(1) IN GENERAL.—Beginning on the date that
2 is 3 years after the date of enactment of this sub-
3 section, the term ‘but does not include solid or dis-
4 solved material in domestic sewage’ may not, for the
5 purpose of paragraph (27) of section 1004 of the
6 Solid Waste Disposal Act (42 U.S.C. 6903(27)), be
7 interpreted, construed, or applied to exclude from
8 the definition of solid waste under such paragraph
9 any pollutant introduced by a source into a treat-
10 ment works (as defined in section 212), unless—

11 “(A) the pollutant and source are subject
12 to a pretreatment standard promulgated by the
13 Administrator under this section and the source
14 is in compliance with the standard;

15 “(B)(i) the Administrator has promulgated
16 a schedule for establishing a pretreatment
17 standard pursuant to section 304(m) that
18 would be applicable to the pollutant and source
19 not later than 5 years after the date of enact-
20 ment of this subsection and the standard is pro-
21 mulgated on or before the date established in
22 the schedule; or

23 “(ii) the pollutant and source are subject
24 to a local limit and the local limit for the pollut-
25 ant and source is equivalent to the best dem-

1 onstrated available treatment technology as de-
2 termined by the Administrator under section
3 3004(m) of the Solid Waste Disposal Act (42
4 U.S.C. 6924(m)) or a pretreatment standard
5 equivalent to a standard under subsection (b)
6 or section 402(b)(9).

7 “(2) PROHIBITION ON INTRODUCTION OF HAZ-
8 ARDOUS WASTE.—It shall be unlawful to introduce
9 into a publicly owned treatment works any pollutant
10 that is a hazardous waste. Notwithstanding the pro-
11 visions of this Act, a publicly owned treatment works
12 (as defined in section 212) receiving or treating any
13 hazardous waste shall not be deemed to be generat-
14 ing, treating, storing, disposing of, or otherwise
15 managing a hazardous waste for the purposes of this
16 Act, solely on the basis that any other person has
17 introduced a hazardous waste into the collection sys-
18 tem for such publicly owned treatment works.”.

19 **SEC. 205. POLLUTION PREVENTION PLANNING.**

20 Section 308 (33 U.S.C. 1318), as amended by section
21 201(e), is further amended by adding at the end the fol-
22 lowing new subsection:

23 “(f) POLLUTION PREVENTION PLANNING.—

24 “(1) IN GENERAL.—

1 “(A) REGULATIONS.—Not later than 2
2 years after the date of enactment of this sub-
3 section, the Administrator shall promulgate reg-
4 ulations that require a person described in
5 paragraph (2) who applies for the issuance or
6 reissuance of a permit pursuant to section 402,
7 or for a local limit for a significant industrial
8 user determined under section 307, to submit a
9 pollution prevention plan to the permitting au-
10 thority (in the case of a direct discharger), or
11 the permitting authority of the State for the ap-
12 propriate publicly owned treatment works (in
13 the case of a local limit) as a condition of the
14 issuance or reissuance of the permit or local
15 limit.

16 “(B) REQUIREMENTS FOR REGULA-
17 TIONS.—The regulations referred to in subpara-
18 graph (A) shall identify not fewer than 20 pol-
19 lutants with respect to which the Administrator
20 determines that discharge reductions are likely
21 to result in a benefit to human health or the
22 environment.

23 “(C) POTENTIAL FOR POLLUTANT REDUC-
24 TION.—The regulations shall indicate the poten-

1 tial for pollutant reduction within categories or
2 subcategories of dischargers.

3 “(2) POLLUTION PREVENTION PLANNING RE-
4 QUIREMENT.—The Administrator shall identify the
5 persons who are required to comply with paragraph
6 (1). In identifying the persons, the Administrator
7 shall provide that, not later than 7 years after the
8 date of enactment of this subsection, not less than
9 80 percent of the volume of each pollutant listed
10 pursuant to paragraph (1)(B) released into waters
11 at the time of the identification is subject to plans
12 prepared pursuant to this subsection.

13 “(3) REQUIREMENTS FOR POLLUTION PREVEN-
14 TION PLANS.—

15 “(A) IN GENERAL.—Each pollution pre-
16 vention plan prepared pursuant to this sub-
17 section shall—

18 “(i) address pollutants listed pursuant
19 to section 307(a) with respect to which the
20 discharger is required to report under sec-
21 tion 313 of the Emergency Planning and
22 Community Right-to-Know Act of 1986
23 (42 U.S.C. 11023); and

24 “(ii) with respect to a direct dis-
25 charger, be submitted as part of the appli-

1 cation for the issuance or the reissuance of
2 a permit under section 402, and with re-
3 spect to a person subject to a pretreatment
4 requirement, be submitted to the permit-
5 ting authority.

6 “(B) MINIMUM REQUIREMENTS FOR
7 PLAN.—Each pollution prevention plan referred
8 to in subparagraph (A) shall, at a minimum—

9 “(i) establish goals for pollution pre-
10 vention (including the reduction in the use
11 of pollutants, byproduct generation, and
12 in-process recycling) over the term of a
13 permit referred to in paragraph (1), or the
14 period during which a local limit referred
15 to in paragraph (1) applies;

16 “(ii) address water use efficiency;

17 “(iii) include onsite plans for the at-
18 tainment of the goals established under
19 clause (i); and

20 “(iv) provide for annual reports to the
21 agency that issues a permit concerning
22 progress toward attainment of the goals
23 established under clause (i).

24 “(C) GUIDANCE.—Not later than 4 years
25 after the date of enactment of this subsection,

1 the Administrator shall issue guidance that in-
 2 dicates the range of the potential and dem-
 3 onstrated reduction in pollution under pollution
 4 prevention plans submitted pursuant to this
 5 subsection.

6 “(D) AVAILABILITY OF PLANS.—

7 “(i) IN GENERAL.—The pollution pre-
 8 vention plan for each facility shall be re-
 9 tained at the facility, and, for purposes of
 10 administering this Act, shall be available to
 11 the Administrator, the State in which the
 12 facility is located, and any local govern-
 13 ment agency given authority by the State
 14 to inspect the plans. Any documents and
 15 other records obtained or reviewed may not
 16 be deemed to be public records or docu-
 17 ments.

18 “(ii) AVAILABILITY TO THE PUBLIC.—
 19 The pollution prevention plan summaries
 20 for each facility shall be made available to
 21 the public at the facility during normal
 22 business hours.

23 “(4) REPORT TO CONGRESS.—Not later than 5
 24 years after the date of enactment of this subsection,
 25 the Administrator shall submit a report to Congress

1 that describes the pollutant reductions accomplished
 2 pursuant to plans prepared pursuant to this sub-
 3 section.”.

4 **TITLE III—WATERSHED PLAN-**
 5 **NING AND NONPOINT POLLU-**
 6 **TION CONTROL**

7 **SEC. 301. WATER QUALITY MONITORING.**

8 (a) STATE WATER QUALITY MONITORING PRO-
 9 GRAMS.—Subsection (b) of section 305 (33 U.S.C.
 10 1315(b)) is amended to read as follows:

11 “(b)(1) Each State shall conduct a comprehensive
 12 program to monitor the quality of navigable waters and
 13 aquatic sediment within the State.

14 “(2) Each State monitoring program conducted pur-
 15 suant to this subsection shall, at a minimum—

16 “(A) assess whether the waters of the State (in-
 17 cluding the rivers, lakes, and coastal waters of the
 18 State)—

19 “(i) provide for the protection and propa-
 20 gation of a balanced population of shellfish,
 21 fish, and wildlife; and

22 “(ii) allow for recreation in and on the wa-
 23 ters;

24 “(B) identify waters that do not meet a water
 25 quality standard (including a designated use);

1 “(C) assess the contribution of point and
2 nonpoint sources to the water pollution problems of
3 the State referred to in subparagraphs (A) and (B);
4 and

5 “(D) provide that monitoring activities in the
6 State be scheduled, to the extent practicable, to pro-
7 vide for continuous collection of information over
8 each period that is the subject of a report submitted
9 pursuant to paragraph (5).

10 “(3) Not later than 2 years after the date of enact-
11 ment of this paragraph, the Administrator shall promul-
12 gate regulations that specify minimum requirements for
13 each State monitoring program conducted pursuant to this
14 subsection.

15 “(4) Each State monitoring program conducted pur-
16 suant to this subsection—

17 “(A) shall coordinate the assessment of water
18 and sediment quality within the State;

19 “(B) in coordinating the assessment referred to
20 in subparagraph (A), may draw on data from—

21 “(i) the monitoring programs of Federal
22 agencies;

23 “(ii) the monitoring of dischargers pursu-
24 ant to section 308; and

25 “(iii) volunteer monitoring programs;

1 “(C) may collect and assess original data that
2 is necessary to supplement the data sources referred
3 to in subparagraph (B); and

4 “(D) shall be conducted in coordination and co-
5 operation with the Water Quality Monitoring Coun-
6 cil established under subsection (c).

7 “(5)(A) Each State shall prepare for all waters within
8 the State and submit to the Administrator not later than
9 August 1, 1995, information on the attainment and main-
10 tenance of water quality. The information required under
11 this paragraph shall be updated with information supplied
12 by the States not less frequently than every 5 years.

13 “(B) The State shall publish a report on the monitor-
14 ing program, including a compilation of the data, not later
15 than 5 years after the date of enactment of this para-
16 graph, and every 5 years thereafter.

17 “(C) Each State shall include in each report referred
18 to in subparagraph (A) data collected from hydrologic
19 study units and fixed monitoring stations operated by
20 Federal agencies.

21 “(6) The Administrator shall ensure that—

22 “(A) the data provided in the reports submitted
23 pursuant to paragraph (5) are maintained in a re-
24 pository on a continuous basis by the Environmental
25 Protection Agency; and

1 “(B) the repository is updated in a timely fash-
2 ion.”.

3 (b) WATER QUALITY MONITORING COUNCIL.—Sec-
4 tion 305 (33 U.S.C. 1315) is amended by adding at the
5 end the following new subsection:

6 “(c)(1) There is established a Water Quality Monitor-
7 ing Council (referred to in this subsection as the ‘Coun-
8 cil’). The Council shall give advice with respect to the co-
9 ordination of Federal and State water quality monitoring
10 programs.

11 “(2) The Council shall be composed of—

12 “(A) a representative of the Administrator, who
13 shall be a cochairperson of the Council;

14 “(B) a representative of the Director of the
15 United States Geological Survey, who shall be a co-
16 chairperson of the Council;

17 “(C) 3 representatives of appropriate Federal
18 agencies appointed by the President (after receiving
19 recommendations from the Administrator);

20 “(D) 3 representatives of State environmental
21 protection agencies, appointed by the Administrator;

22 “(E) 3 representatives of the academic commu-
23 nity, appointed by the Administrator; and

1 “(F) 3 representatives of volunteer water qual-
2 ity monitoring organizations, appointed by the Ad-
3 ministrators.

4 “(3) The Council shall, at a minimum—

5 “(A) review and make recommendations regard-
6 ing the implementation of Federal water and sedi-
7 ment quality monitoring programs;

8 “(B) review and make recommendations regard-
9 ing the implementation of State water monitoring
10 programs pursuant to subsection (b);

11 “(C) recommend consistent quality assurance
12 standards for monitoring programs implemented
13 pursuant to this section;

14 “(D) recommend procedures and methods for
15 statistical analysis of monitoring data; and

16 “(E) assist in the effective coordination of data
17 management systems.

18 “(4) Members of the Council may not be compensated
19 for any travel expenses incurred, and may not receive any
20 compensation, by reason of service on the Council.

21 “(5)(A) Not later than 2 years after the date of en-
22 actment of this subsection, the President, after consider-
23 ing the recommendations of the Council, shall submit to
24 Congress a strategy for the coordinated implementation
25 of water quality monitoring programs.

1 “(B) The strategy referred to in subparagraph (A)
2 shall—

3 “(i) review and assess the location and function
4 of fixed monitoring stations and hydrologic study
5 units; and

6 “(ii) describe—

7 “(I) the roles and responsibilities of Fed-
8 eral agencies;

9 “(II) methods of coordination among agen-
10 cies, including procedures to ensure the imple-
11 mentation of the strategy;

12 “(III) the anticipated level of resources to
13 be devoted to monitoring programs by each
14 agency; and

15 “(IV) measures to ensure that Federal
16 monitoring programs are responsive to the mon-
17 itoring needs of States to the fullest extent
18 practicable.

19 “(6)(A) The Administrator, in cooperation with the
20 Council, shall prepare and submit to Congress, on January
21 1, 1996, and every 5 years thereafter, a report that—

22 “(i) describes the findings of monitoring pro-
23 grams conducted pursuant to this section; and

1 “(ii) provides a comprehensive assessment of
2 conditions and trends in the quality of navigable wa-
3 ters throughout the United States.

4 “(B) The report referred to in subparagraph (A)
5 shall also identify needed changes to Federal and State
6 monitoring programs, including the adequacy of funding
7 for the accomplishment of the programs provided for in
8 this section.”.

9 **SEC. 302. COMPREHENSIVE WATERSHED MANAGEMENT.**

10 Title III (33 U.S.C. 1311 et seq.) is amended by add-
11 ing at the end the following new section:

12 **“SEC. 321. COMPREHENSIVE WATERSHED MANAGEMENT.**

13 **“(a) FINDINGS AND PURPOSE.—**

14 **“(1) FINDINGS.—**Congress finds that com-
15 prehensive watershed management will further the
16 goals and objectives of this Act by—

17 **“(A)** identifying more fully water quality
18 impairments and the pollutants, sources, and
19 activities causing impairments;

20 **“(B)** integrating water protection quality
21 efforts under this Act with other natural re-
22 source protection efforts, including Federal ef-
23 forts to define and protect ecological systems
24 (including the waters and the living resources
25 supported by the waters);

1 “(C) defining long-term social, economic
2 and natural resource objectives and the water
3 quality necessary to attain or maintain the ob-
4 jectives;

5 “(D) increasing, through citizen participa-
6 tion in the watershed management process,
7 public support for improved water quality;

8 “(E) identifying priority water quality
9 problems that need immediate attention; and

10 “(F) identifying the most cost-effective
11 measures to achieve the objectives of this Act.

12 “(2) PURPOSE.—The purpose of this section is
13 to encourage comprehensive watershed management
14 in maintaining and enhancing water quality, in re-
15 storing and protecting living resources supported by
16 the waters, and in ensuring waters of a quality suffi-
17 cient to meet human needs, including water supply
18 and recreation.

19 “(b) DESIGNATION OF WATERSHEDS.—

20 “(1) IN GENERAL.—The Governor of a State
21 may at any time designate waters (including ground
22 waters) and associated land areas within the State
23 as a watershed management unit. To the extent
24 practicable, the boundaries of each watershed man-
25 agement unit shall be consistent with the

1 hydrological units identified by the United States
2 Geological Survey of the Department of the Interior
3 as the most appropriate units for planning purposes.

4 “(2) REQUIREMENTS FOR DESIGNATION.—Each
5 designation under paragraph (1) shall include an
6 identification of the waters within the watershed
7 management unit that are not meeting water or
8 sediment quality standards (including designated
9 uses) at the time of the designation. Each designa-
10 tion under paragraph (1) shall also identify any out-
11 standing national resource water and sensitive
12 aquatic or wildlife habitat area within the watershed
13 management unit that is the subject of the designa-
14 tion.

15 “(3) WATERSHED MANAGEMENT UNIT.—

16 “(A) IN GENERAL.—Each watershed man-
17 agement unit referred to in paragraph (1) shall,
18 to the extent practicable, include the land area
19 occupied by all sources of pollution that are
20 causing, or contributing to, an impairment
21 identified pursuant to paragraph (2).

22 “(B) MULTISTATE UNITS.—Each water-
23 shed management unit established under this
24 subsection may include waters and associated
25 land areas in more than 1 State, if the Gov-

1 ernors of the States affected jointly designate
2 the watershed management unit.

3 “(4) DESIGNATION.—Each designation of a wa-
4 tershed management unit made pursuant to this
5 subsection, and each corresponding management en-
6 tity designated under paragraph (1) or (2) of sub-
7 section (c), shall be submitted to the Administrator
8 for approval. The Administrator shall approve the
9 designation not later than 180 days after the date
10 of submittal, if the designation meets the require-
11 ments of this section. If the Administrator dis-
12 approves the designation, the Administrator shall
13 notify the State in writing of the reasons for dis-
14 approval. The State may resubmit the designation
15 amended to meet the objections of the Adminis-
16 trator.

17 “(c) MANAGEMENT ENTITY.—

18 “(1) IN GENERAL.—The Governor of a State
19 shall determine the entity responsible for developing
20 and implementing a plan for each watershed man-
21 agement unit designated under this section. The
22 management entity may be an agency of State gov-
23 ernment, a local government agency, a substate re-
24 gional planning organization, a conservation district
25 or other natural resource management district, or

1 any other public or nonprofit entity with the capac-
2 ity to carry out the responsibilities authorized by
3 this section, as set forth by the Administrator in the
4 guidance required under subsection (i).

5 “(2) MULTISTATE MANAGEMENT ENTITY.—If a
6 watershed management unit is designated to include
7 land area in more than 1 State, the Governors of the
8 States affected shall jointly determine the appro-
9 priate management entity.

10 “(3) ELIGIBILITY FOR ASSISTANCE.—If the Ad-
11 ministrator determines that the management entity
12 identified by the Governor has adequate powers to
13 carry out the responsibilities authorized by this sec-
14 tion, the entity shall be eligible for assistance under
15 subsection (f).

16 “(d) WATERSHED MANAGEMENT AND PLANNING AC-
17 TIVITIES.—Watershed management and planning activi-
18 ties eligible to receive assistance from the Administrator
19 under this Act include, with respect to a watershed—

20 “(1) characterizing the waters and land uses of
21 the watershed management unit (including the exist-
22 ing, designated, and potential uses of the waters, the
23 living resources supported by the waters, sensitive
24 habitats within the watershed, and other natural, so-

1 cial and economic values that may be affected by
2 water quality within the watershed);

3 “(2) identifying problems related to water qual-
4 ity within the watershed (including impairments and
5 threats to the existing, designated, and potential
6 uses, pollutants of concerns, and sources of pollut-
7 ants causing threats or impairments);

8 “(3) selecting short-term and long-term goals
9 for watershed management (including the mainte-
10 nance or restoration of water quality, sediment qual-
11 ity, aquatic and wildlife habitat, and living resources
12 supported by the waters of the watershed);

13 “(4) selecting measures and practices to meet
14 identified goals (including the allocation of pollutant
15 load reductions among sources of pollution within
16 the watershed and the design of remedial actions
17 necessary to restore uses);

18 “(5) identifying and coordinating specific
19 projects and activities necessary to reduce pollutant
20 loadings or to restore water quality or aquatic habi-
21 tat within the watershed (including identifying Fed-
22 eral, State, local, and other financial resources need-
23 ed to support the projects and activities); and

24 “(6) identifying the appropriate institutional ar-
25 rangements to carry out a plan approved pursuant

1 to subsection (g) and ensuring compliance with
2 schedules and limits established by the management
3 process.

4 “(e) PUBLIC PARTICIPATION.—To the maximum ex-
5 tent practicable, each State shall establish procedures, in-
6 cluding the establishment of technical and citizens’ advi-
7 sory committees, to encourage the public to participate in
8 developing the comprehensive watershed management pro-
9 gram under this section.

10 “(f) SUPPORT FOR WATERSHED MANAGEMENT AND
11 PLANNING.—

12 “(1) INTERAGENCY COMMITTEE.—There is es-
13 tablished an interagency committee to support com-
14 prehensive watershed management and planning.
15 The President shall appoint the members of the
16 committee. The members shall include a representa-
17 tive from each Federal agency that carries out pro-
18 grams and activities that may have a significant im-
19 pact on water quality or other natural resource val-
20 ues that may be appropriately addressed through
21 comprehensive watershed management. In appoint-
22 ing members to the committee, the President may
23 include such representatives from a State or local
24 government and individuals from any affected indus-
25 try, public or private educational institution, and the

1 general public as the Administrator determines ap-
2 propriate.

3 (2) COMPENSATION.—Members of the Council
4 may not be compensated for any travel expenses in-
5 curred, and may not receive any compensation, by
6 reason of service on the Council.

7 “(3) USE OF OTHER FUNDS UNDER THIS
8 ACT.—The planning and management activities car-
9 ried out by a management entity pursuant to this
10 section may be carried out with funds made avail-
11 able pursuant to section 106(h), 205(j), 319(e), or
12 604(b) (or any combination thereof).

13 “(g) APPROVED PLANS.—

14 “(1) IN GENERAL.—The Governor of a State
15 may submit to the Administrator for approval a
16 comprehensive watershed management plan devel-
17 oped pursuant to this section. The Administrator
18 shall, after notice and opportunity for public com-
19 ment, approve or disapprove a comprehensive water-
20 shed management plan submitted by a Governor
21 pursuant to this subsection. The Administrator shall
22 approve the plan if the plan satisfies each of the fol-
23 lowing conditions:

1 “(A) The plan has been developed for a
2 watershed management unit designated and ap-
3 proved pursuant to subsection (b).

4 “(B) The entity with responsibility to carry
5 out the plan has the legal authority and finan-
6 cial resources to carry out the plan.

7 “(C) Except as provided in subparagraph
8 (D), if the watershed includes waters that are
9 not meeting water or sediment quality stand-
10 ards at the time of submission—

11 “(i) the plan—

12 “(I) identifies the pollutants and
13 sources causing the impairment; and

14 “(II) demonstrates that the
15 standards will be attained as expedi-
16 tiously as practicable, but not later
17 than 10 years after the date of sub-
18 mittal of the plan; and

19 “(III) includes periodic deter-
20 minations to ensure reasonable fur-
21 ther progress within the economic ca-
22 pability of the sources within the wa-
23 tershed is made toward attaining the
24 standards; and

1 “(ii) the plan includes a list of
2 projects and activities necessary to achieve
3 allocated load reductions consistent with
4 the requirements of section 303(b), and—

5 “(I) identifies those projects of
6 highest priority; and

7 “(II) includes milestones for the
8 implementation of the projects and ac-
9 tivities.

10 “(D) In the case of a watershed with re-
11 spect to which pollutant loads are attributable
12 only to point sources the plan demonstrates
13 that the standards will be attained not later
14 than 5 years after the date of enactment of this
15 section and that periodic determinations will be
16 made to determine that reasonable further
17 progress within the economic capability of the
18 sources within the watershed during the period
19 specified is made.

20 “(E) For those waters in the watershed at-
21 taining water quality standards at the time of
22 submission, the plan identifies those projects
23 and activities necessary to maintain water qual-
24 ity standards in the future.

1 “(F) Any other condition the Adminis-
2 trator may establish by guidance or regulation.

3 “(2) PLANNING AND IMPLEMENTATION SCHED-
4 ULE.—Each plan submitted and approved under this
5 subsection shall include a planning and implementa-
6 tion schedule for a period of at least 5 years. The
7 approval of the Administrator of a plan shall apply
8 for a period not to exceed 5 years. A revised and up-
9 dated plan may be submitted prior to the expiration
10 of the period specified in the preceding sentence for
11 approval pursuant to the same conditions and re-
12 quirements that apply to any initial plan for a wa-
13 tershed that is approved pursuant to this subsection.

14 “(3) DELEGATION OF AUTHORITY.—

15 “(A) IN GENERAL.—The Administrator
16 may delegate to a State the authority to ap-
17 prove watershed plans under this subsection,
18 if—

19 “(i) the State submits a program to
20 the Administrator that is no less stringent
21 than the guidance issued under subsection
22 (i); and

23 “(ii) the Administrator approves the
24 State program and the Administrator peri-
25 odically reviews State decisions to approve

1 specific watershed plans to determine
2 whether the plans comply with the require-
3 ments of this subsection and the guidance
4 issued by the Administrator.

5 “(B) REVOCATION.—If at any time after
6 delegating authority to a State pursuant to sub-
7 paragraph (A), the Administrator determines
8 that a State is not meeting a requirement re-
9 ferred to in such subparagraph, the Adminis-
10 trator may revoke the delegation.

11 “(h) INCENTIVES FOR WATERSHED PLANNING.—

12 “(1) PROJECTS AND ACTIVITIES.—Projects and
13 activities identified in an approved plan as necessary
14 for attainment and maintenance of water and sedi-
15 ment quality standards applicable to the waters
16 within the watershed management unit, and not oth-
17 erwise required by this or other Federal law, shall—

18 “(A) be eligible for funding under section
19 603(c)(1)(F);

20 “(B) be included in any needs assessment
21 conducted pursuant to section 516; and

22 “(C) be eligible for funding under section
23 604(a)(2)(C).

24 “(2) ACTIVITIES OF FEDERAL AGENCIES.—

1 “(A) IN GENERAL.—Each activity of a
2 Federal agency that affects land use, water
3 quality, or the natural resources within a water-
4 shed planning unit for which a plan has been
5 approved pursuant to subsection (g) shall be
6 carried out in a manner that is consistent with
7 the policies established in the plan.

8 “(B) EXEMPTION.—Notwithstanding sub-
9 paragraph (A), the President may exempt a
10 Federal agency activity from the requirements
11 of a plan approved under subsection (g) if the
12 President determines that it is in the para-
13 mount interest of the United States to exempt
14 the Federal agency.

15 “(3) LIMITATION.—

16 “(A) IN GENERAL.—Notwithstanding sec-
17 tion 301(b)(1)(C), and subject to the require-
18 ments of section 402(o), the Administrator or a
19 State may issue a permit to a point source that
20 includes a limitation for a pollutant to be dis-
21 charged by the source to a specific portion of a
22 navigable water that does not ensure attain-
23 ment and maintenance of water quality stand-
24 ards (alone, or in combination with, limitations

1 issued for other point sources discharging to
2 the water), if—

3 “(i) the water is part of a watershed
4 management unit for which a plan has
5 been approved under subsection (g); and

6 “(ii) the plan includes enforceable re-
7 quirements that have been imposed under
8 State or local law for nonpoint source pol-
9 lution load reductions that, in combination
10 with the limitations established for point
11 sources, provide for the attainment and
12 maintenance of water quality standards for
13 the waters prior to expiration of the plan.

14 “(B) EXTENSION OF TERM.—Notwith-
15 standing section 402(b)(1)(B), the Adminis-
16 trator or a State is authorized to grant an ex-
17 tension of the term of any permit issued pursu-
18 ant to section 402 for a period not to exceed 4
19 years after the date of enactment of this section
20 for any source—

21 “(i) that is located in an area that is
22 designated as a watershed planning unit;
23 and

24 “(ii) for which the Governor of the
25 State indicates to the Administrator in

1 writing, prior to the expiration date of the
2 permit (as in effect on the date of enact-
3 ment of this section), an intention to pre-
4 pare and submit a watershed management
5 plan for approval under subsection (g).

6 “(4) EXTENSION FOR APPROVED PLAN.—Not-
7 withstanding section 402(b)(1)(B), the term of a
8 permit issued to a point source under section 402
9 may be extended to be a term of 10 years for any
10 point source located in a watershed management
11 unit for which a plan has been approved under sub-
12 section (g), if the plan provides for the attainment
13 and maintenance of water quality standards (includ-
14 ing designated uses) in waters affected by the dis-
15 charge from the point source that is the subject of
16 the permit for the entire term of the permit subject
17 to the extension. Notwithstanding the preceding sen-
18 tence, any permit issued pursuant to this section
19 shall be renewed and revised as necessary to attain
20 and maintain water quality standards if at any time
21 during the term of the permit the waters affected by
22 the discharge do not meet water quality standards.

23 “(i) GUIDANCE.—Not later than 18 months after the
24 date of enactment of this section, the Administrator shall
25 issue guidance for the comprehensive watershed manage-

1 ment and planning under this section that specifies mini-
 2 mum requirements for watershed designation, legal au-
 3 thorities and financial resources for management entities,
 4 public participation, and elements necessary for approval
 5 of a watershed management plan pursuant to subsection
 6 (g).

7 “(j) STATE WATER LAW.—Nothing in this section is
 8 intended to amend, supersede, or abrogate any right to
 9 a quantity of water that has been established by any inter-
 10 state water compact, Supreme Court decree, State water
 11 law, or any requirement imposed, or right provided under,
 12 any Federal or State environmental or public health law.”.

13 **SEC. 303. IMPAIRED WATERS IDENTIFICATION.**

14 Subsection (a) of section 319 (33 U.S.C. 1329(a)) is
 15 amended to read as follows:

16 “(a) IMPAIRED WATERS.—

17 “(1) IMPAIRED WATERS.—

18 “(A) IN GENERAL.—Not later than 2 years
 19 after the date of enactment of clause (i), each
 20 State shall submit to the Administrator a list of
 21 waters within the State that cannot, without
 22 additional action to control nonpoint sources of
 23 pollution, reasonably be anticipated to attain or
 24 maintain—

1 “(i) water quality standards for the
2 waters; or

3 “(ii) a water quality that will ensure
4 the protection of public health and public
5 water supplies, and the protection and
6 propagation of a balanced population of
7 shellfish, fish, and wildlife and allow for
8 recreational activities in and on the water.

9 “(B) CONTENTS OF LIST.—A list submit-
10 ted pursuant to this paragraph shall include, at
11 a minimum, waters listed pursuant to sections
12 304(l)(1)(A) and 319(a)(1)(A) for which indi-
13 vidual control strategies have been promulgated,
14 unless the State demonstrates that the waters
15 do not meet the listing criteria referred to in
16 subparagraph (A).

17 “(C) ADDITIONS TO LIST.—

18 “(i) ACTION BY A STATE.—A State
19 may add to the list submitted to the Ad-
20 ministrator pursuant to subparagraph (A)
21 any waters within the State that the State
22 determines to be—

23 “(I) threatened with impairment;

24 or

1 “(II) an outstanding national re-
2 source water, as designated pursuant
3 to section 303(g).

4 “(ii) ACTION BY THE ADMINIS-
5 TRATOR.—The Administrator may add a
6 water to a list submitted by a State, or ex-
7 pand an area identified pursuant to sub-
8 paragraph (E) if the water meets the list-
9 ing criteria referred to in subparagraph
10 (A).

11 “(D) FAILURE BY STATE.—In any case in
12 which a State fails to submit a list pursuant to
13 this paragraph by the date specified in subpara-
14 graph (A), the Administrator shall carry out
15 the requirements of this paragraph not later
16 than 1 year after the date specified.

17 “(E) DELINEATION OF WATERSHED.—The
18 list prepared pursuant to this paragraph shall
19 include a delineation of the land area within the
20 State of the watershed of a listed water. The
21 delineated area shall include all sources of pol-
22 lution within the State that cause, or contribute
23 to, the impairment of the water quality of the
24 water. In any case in which the watershed areas
25 of individual impaired waters overlap, a State

1 may combine waters to form a single watershed
2 area for the purposes of the inclusion of the wa-
3 tershed area on the list prepared pursuant to
4 subparagraph (A).

5 “(F) PUBLIC REVIEW AND COMMENT.—

6 Each State shall provide an opportunity for
7 public review and comment on the list prepared
8 pursuant to this paragraph and shall, at a mini-
9 mum, hold at least 1 public hearing concerning
10 the list not later than 60 days prior to submit-
11 tal of the list to the Administrator.

12 “(G) PETITION.—Any person may submit

13 to the State in which the person resides a peti-
14 tion for the listing of a water pursuant to this
15 paragraph. In any case in which a petition es-
16 tablishes that a water meets the listing criteria
17 referred to in subparagraph (A), or in the case
18 of a petition for listing pursuant to paragraph
19 (4) if the waters meet the requirements of para-
20 graph (4), the State shall add the waters to the
21 list prepared pursuant to subparagraph (A).

22 “(H) APPROVAL BY ADMINISTRATOR.—

23 The Administrator shall review each list re-
24 quired to be prepared pursuant to this para-
25 graph not later than 90 days after receipt of

1 the list. If the Administrator finds that the list
2 is consistent with the requirements of this sub-
3 section, the Administrator shall, after notice
4 and opportunity for public comment, approve
5 the list. The approval or disapproval by the Ad-
6 ministrator of a list shall constitute final agency
7 action for the purposes of section 509. The
8 court shall not set aside or reward a decision to
9 list a water unless the court decides, on the
10 basis of the rulemaking record, that the deci-
11 sion was arbitrary and capricious, or otherwise
12 in violation of law.

13 “(2) REASSESSMENT OF IMPAIRED WATERS.—
14 Not later than 7 years after the date of enactment
15 of subparagraph (A), and every 5 years thereafter,
16 each State shall submit to the Administrator a list
17 of waters and a description of watershed areas of
18 the waters in a manner consistent with the proce-
19 dures for listing a watershed under paragraph (1).
20 The list shall also include waters that fail to meet—

21 “(A) biological monitoring regulations es-
22 tablished pursuant to the information published
23 pursuant to section 304(a)(8); or

1 “(B) standards for pollutants adopted pur-
2 suant to section 303 associated with nonpoint
3 sources.”.

4 **SEC. 304. NONPOINT POLLUTION CONTROL.**

5 (a) **MANAGEMENT PROGRAM REVISION.**—Section
6 319 (33 U.S.C. 1329) is amended—

7 (1) in subsection (b)—

8 (A) in paragraph (1)—

9 (i) by inserting before “The Governor
10 of each State” the following new sentence:
11 “Not later than 30 months after the date
12 of enactment of the Water Pollution Pre-
13 vention and Control Act of 1993, the Gov-
14 ernor of each State shall prepare and sub-
15 mit to the Administrator a revised man-
16 agement program.”; and

17 (ii) by adding at the end of the para-
18 graph the following new sentence: “Each
19 management program prepared under this
20 subsection shall be consistent with the
21 guidance developed under subsection (c).”;

22 (B) in paragraph (2)—

23 (i) in subparagraph (A), by striking
24 “paragraph (1)(B),” and all that follows
25 through the end of the subparagraph and

- 1 inserting the following: "subsection
2 (c)(2)(A), except that the State may ex-
3 empt a category of sources on the basis of
4 a demonstration to the Administrator that
5 the category of sources does not cause im-
6 pairment to the waters within the State.";
- 7 (ii) in subparagraph (B), by adding at
8 the end the following new sentence: "Ex-
9 cept for categories, subcategories, or
10 sources addressed pursuant to subsection
11 (f), the programs and management prac-
12 tices shall be consistent with guidance pub-
13 lished pursuant to subsection (c).";
- 14 (iii) by striking subparagraph (C) and
15 inserting the following new subparagraph:
16 "(C) A schedule containing annual mile-
17 stones for the implementation of management
18 measures as expeditiously as practicable but not
19 later than 3 years after the date of approval of
20 the program for new sources";
- 21 (iv) by redesignating subparagraphs
22 (E) and (F) as subparagraphs (F) and
23 (G), respectively; and
- 24 (v) by inserting after subparagraph
25 (D) the following new subparagraph:

1 “(E) For any source in a category or class
2 of sources listed in guidance developed under
3 subsection (c) that is also in the watershed de-
4 lineated under section 319(a)(1)—

5 “(i) the implementation of manage-
6 ment measures as expeditiously as prac-
7 ticable, but not later than 3 years after the
8 date of approval of the program; or

9 “(ii) the development of site-specific
10 water quality plans pursuant to subsection
11 (f) as expeditiously as practicable, but not
12 later than 3 years after the date of ap-
13 proval of the program, including appro-
14 priate agreements with the Secretary of
15 Agriculture or appropriate State agencies
16 for the development of each plan.”;

17 (C) by striking paragraph (3) and insert-
18 ing the following new paragraph:

19 “(3) REVISION OF PLANS.—

20 “(A) IN GENERAL.—Not later than 7 years
21 after the date of enactment of the Water Pollu-
22 tion Prevention and Control Act of 1993, each
23 State shall review and revise the plan developed
24 pursuant to paragraph (2) in a manner consist-
25 ent with the requirements of this section.

1 “(B) SITE-SPECIFIC WATER QUALITY
2 PLANS.—Each plan submitted pursuant to this
3 paragraph may provide for the implementation
4 of site-specific water quality plans pursuant to
5 paragraph (2)(E)(ii) only if the plan is for a
6 source within the watershed area of an im-
7 paired water with respect to which the Adminis-
8 trator has approved a watershed plan pursuant
9 to section 321.

10 “(C) ENFORCEMENT.—Each plan devel-
11 oped pursuant to this paragraph shall provide
12 for the necessary legal authority to ensure the
13 implementation of management measures for
14 existing sources and new sources and measures
15 required under plans developed under a pro-
16 gram referred to in subsection (b). The legal
17 authority shall include, at a minimum, the au-
18 thority to seek injunctive relief for the failure to
19 implement a measure referred to in the preced-
20 ing sentence.

21 “(D) FAILURE TO SUBMIT PLAN.—If a
22 State fails to submit a plan pursuant to this
23 paragraph, or the Administrator does not ap-
24 prove the plan, not later than 1 year after the
25 deadline for the submittal of the plan to the

1 Administrator, or 1 year after the Adminis-
2 trator disapproves the plan, the Administrator
3 shall publish a regulation providing for the im-
4 plementation of enforceable minimum control
5 measures for categories of sources in the State
6 that is consistent with this subsection. The Ad-
7 ministrator may use the sums allocated to the
8 State under subsection (h) to implement the
9 regulation (including making grants to substate
10 agencies approved by the Administrator pursu-
11 ant to subsection (e)).”;

12 (D) by striking paragraph (4) and insert-
13 ing the following new paragraph:

14 “(4) PUBLIC AND AGENCY INVOLVEMENT.—In
15 developing and implementing a management pro-
16 gram under this subsection, a State shall provide for
17 public review and comment and shall cooperate with
18 local, State, and interstate entities.”; and

19 (E) by adding at the end the following new
20 paragraphs:

21 “(5) ECONOMIC CAPABILITY.—A State may,
22 with the approval of the Administrator, adopt alter-
23 native requirements with respect to a specific
24 nonpoint source of pollution based on a showing by

1 the owner or operator of the source that the modi-
2 fied requirements will—

3 “(A) represent the maximum use of man-
4 agement measures and practices within the eco-
5 nomic capability of the owner or operator; and

6 “(B) result in reasonable further progress
7 toward elimination of pollution.

8 “(6) DEFINITIONS.—As used in this section:

9 “(A) EXISTING SOURCE.—The term ‘exist-
10 ing source’ means any nonpoint source, cat-
11 egory, or subcategory of sources that is not a
12 new source.

13 “(B) NEW SOURCE.—The term ‘new
14 source’ means any source, category, or sub-
15 category of sources that is described in one of
16 the following clauses:

17 “(i) The development or significant
18 redevelopment of a commercial or residen-
19 tial site of 5 or more acres that is not sub-
20 ject to a stormwater permit issued under
21 section 402(p).

22 “(ii) The construction or significant
23 reconstruction of a road, highway, or
24 bridge that is not subject to a stormwater
25 permit issued under section 402(p).

1 “(iii) The harvesting of timber or the
2 construction of a forest road.

3 “(iv) The construction or significant
4 expansion of an animal feeding operation
5 that is not subject to a permit issued
6 under section 402.

7 “(v) A category or subcategory of new
8 sources established by the Administrator
9 under subsection (c).

10 “(vi) A source, category, or sub-
11 category of sources designated as a new
12 source by a State.”;

13 (2) by striking subsection (c) and inserting the
14 following new subsection:

15 “(c) NATIONAL PROGRAM GUIDANCE.—

16 “(1) IN GENERAL.—The Administrator, in con-
17 sultation with the heads of other Federal agencies,
18 shall publish guidance that specifies elements of
19 nonpoint pollution management programs.

20 “(2) GUIDANCE CONTENTS.—The guidance
21 published under this subsection shall include, at a
22 minimum—

23 “(A) a description of categories and
24 subcategories of sources of nonpoint pollution;

1 “(B) management measures appropriate to
2 each category or subcategory of source identi-
3 fied in subparagraph (A), including a descrip-
4 tion of each method or practice, structural or
5 nonstructural control, and operation and main-
6 tenance procedure, that constitutes each meas-
7 ure;

8 “(C) program implementation criteria ap-
9 propriate to ensure the implementation of man-
10 agement measures;

11 “(D) methods to estimate reductions in
12 nonpoint pollution loads necessary to attain and
13 maintain water quality and sediment quality
14 standards and achieve the goals and require-
15 ments of this Act; and

16 “(E) any necessary monitoring to assess
17 over time the success of management measures
18 in reducing nonpoint pollution loads and im-
19 proving water quality.

20 “(3) PUBLICATION OF GUIDANCE.—Not later
21 than 90 days after the date of enactment of this
22 paragraph, the Administrator shall publish proposed
23 guidance pursuant to this subsection, and the Ad-
24 ministrator shall publish final guidance not later
25 than 180 days after such date of enactment.

1 “(4) REVIEW.—The Administrator shall provide
2 the heads of interested Federal agencies, States, and
3 other interested persons with an opportunity to pro-
4 vide written comments on proposed guidance under
5 this subsection.

6 “(5) REGIONAL VARIATION.—The Adminis-
7 trator may, on the recommendation of an adminis-
8 trator of a regional office of the Environmental Pro-
9 tection Agency, modify management measures pur-
10 suant to paragraph (2)(B) to reflect special condi-
11 tions in the region under the jurisdiction of the ad-
12 ministrator of the regional office. The modification
13 shall apply to each State in the region.

14 “(6) DEFINITIONS.—As used in this subsection:

15 “(A) MANAGEMENT MEASURES.—The term
16 ‘management measures’ means economically
17 achievable measures for the control of the addi-
18 tion of pollutants from existing sources and new
19 sources (as defined in subsection (b)(6)) that
20 reflect the greatest degree of pollutant reduc-
21 tion achievable through the application of the
22 best available nonpoint pollution control prac-
23 tices, technologies, processes, siting criteria, op-
24 erating methods, or other alternatives.

1 “(B) PROGRAM IMPLEMENTATION CRI-
2 TERIA.—The term ‘program implementation
3 criteria’ means specified characteristics of a
4 program that will result in the effective and re-
5 liable implementation of management measures
6 and the maintenance of the management meas-
7 ures over the long-term. In establishing the cri-
8 teria, the Administrator shall consider any pro-
9 grams in effect that have been demonstrated by
10 1 or more States to be effective and reliable
11 means of ensuring the implementation and
12 maintenance of a management measure. The
13 term shall include appropriate State statutes,
14 county or municipal ordinances, financial assist-
15 ance programs, and related enforceable authori-
16 ties.”;

17 (3) in subsection (d)—

18 (A) in paragraph (1)—

19 (i) in the first sentence, by striking
20 “report or” both places it appears; and

21 (ii) in the third sentence, by striking
22 “report, management program,” both
23 places it appears, and inserting “manage-
24 ment program”;

25 (B) in paragraph (2)—

1 (i) in subparagraph (A), by striking
2 “(b)(2)” and inserting “(b)”;

3 (ii) in subparagraph (C), by striking
4 “sufficiently expeditious” and inserting
5 “consistent with the guidance referred to
6 in subsection (c)”;

7 (iii) in subparagraph (D), by inserting
8 before “adequate to reduce the level of pol-
9 lution in navigable waters” the following
10 “consistent with the guidance referred to
11 in subsection (c), or otherwise not”; and

12 (C) by striking paragraph (3) and insert-
13 ing the following new paragraph:

14 “(3) GRANT ADJUSTMENT AND REALLOCATION
15 OF FUNDS.—

16 “(A) GRANT ADJUSTMENT—Beginning
17 with fiscal year 1998, and for each fiscal year
18 thereafter, no grant funds available to a State
19 under this section shall be awarded to a State
20 without a management program that has been
21 approved by the Administrator pursuant to sub-
22 section (b).

23 “(B) REALLOCATION OF FUNDS.—Begin-
24 ning with fiscal year 1998, and for each fiscal
25 year thereafter, in the case of a State that does

1 not have a management program that has been
2 approved by the Administrator under subsection
3 (b), the Administrator shall reserve a propor-
4 tionate share for the State of the amount of the
5 grant awarded pursuant to subsection (h) for
6 the preceding fiscal year. The Administrator
7 shall first allocate an amount of the amount re-
8 served among local management programs with-
9 in the State that have been approved pursuant
10 to subsection (e) in such amounts as the Ad-
11 ministrator determines to be appropriate. Any
12 funds that the Administrator does not allocate
13 in accordance with the preceding sentence to
14 support programs approved pursuant to sub-
15 section (e), shall be made available to States
16 that have a program approved by the Adminis-
17 trator under subsection (b)."; and

18 (4) in the first sentence of subsection (e), by
19 striking ", with the approval of such State,".

20 (b) GRANT ASSISTANCE.—Section 319 (33 U.S.C.
21 1329) is amended—

22 (1) in subsection (h)—

23 (A) by striking paragraph (5) and insert-
24 ing the following new paragraph:

25 "(5) ALLOTMENT OF GRANT FUNDS.—

1 “(A) IN GENERAL.—From the sums appro-
2 priated in any fiscal year, the Administrator
3 shall allocate funds in accordance with such fac-
4 tors as the Administrator considers appropriate.

5 “(B) RESERVATION OF FUNDS.—For fiscal
6 years 1996 and 1997, prior to the allotment of
7 funds pursuant to subparagraph (A), the Ad-
8 ministrator shall reserve an amount equal to 50
9 percent of the funds available for allotment for
10 the fiscal year for allotment to States on the
11 basis of the ratio of the number of acres of wa-
12 tershed areas of waters listed pursuant to sub-
13 section (a) in the State to the total number of
14 acres of watershed areas of waters listed pursu-
15 ant to such section.

16 “(C) ALLOTMENT.—Beginning with fiscal
17 year 1998, and for each fiscal year thereafter,
18 prior to allotting funds pursuant to subpara-
19 graph (A), the Administrator shall reserve an
20 amount equal to 50 percent of the funds avail-
21 able for allotment to States on the basis of the
22 estimate of the cost of implementing site-spe-
23 cific water quality plans prepared pursuant to
24 subsection (f) within the watershed area of a
25 water with respect to which the Administrator

1 has approved a watershed plan pursuant to sec-
2 tion 321.”;

3 (B) in paragraph (6), in the first sentence,
4 by inserting before the period at the end the
5 following: “, and shall remain available for the
6 following fiscal year;”;

7 (C) by striking paragraph (7) and insert-
8 ing the following new paragraph:

9 “(7) LIMITATION ON USE OF FUNDS.—

10 “(A) IN GENERAL.— Each State may use
11 funds from a grant made pursuant to this sec-
12 tion to provide financial assistance to a person
13 only to the extent that the assistance is related
14 to the—

15 “(i) cost of a demonstration project;

16 “(ii) incentive grant; or

17 “(iii) land acquisition or conservation
18 easement.

19 “(B) LIMITATION ON INCENTIVE
20 GRANTS.—An incentive grant may be made only
21 if—

22 “(i) no other source of Federal assist-
23 ance is available to implement the meas-
24 ure;

1 “(ii) the amount of funding for a
2 project provided pursuant to this sub-
3 section does not exceed 50 percent of the
4 cost of the project, and the difference be-
5 tween the amount of the funding provided
6 pursuant to this subsection and the cost of
7 the project is paid from non-Federal
8 sources;

9 “(iii) the amount of the grant does
10 not exceed \$5,000 per year;

11 “(iv) the Administrator determines be-
12 fore awarding the grant that the measure
13 assisted by the grant has a design life in
14 excess of 5 years;

15 “(v) in making the grants available,
16 the State will give highest priority to areas
17 identified by the State under subsection
18 (a);

19 “(vi) in making the grants available,
20 the State will give highest priority to per-
21 sons with the greatest financial need; and

22 “(vii) not more than 50 percent of all
23 funds made available to a State under this
24 section shall be available for incentive
25 grants.

1 “(C) LIMITATION ON LAND ACQUISITION
2 AND INCENTIVE GRANTS.—A land acquisition
3 or conservation easement may be funded under
4 this paragraph only if—

5 “(i) in the case of conservation ease-
6 ment, the conservation easement is consist-
7 ent with a site-specific control plan; and

8 “(ii) the amount of funds used for the
9 purposes specified in this subparagraph
10 does not exceed an amount equal to 30
11 percent of the total amount of funds made
12 available as grants to a State under this
13 subsection.

14 “(D) INCENTIVE GRANT DEFINED.—As
15 used in this paragraph, the term ‘incentive
16 grant’ means a grant to an individual to imple-
17 ment a site-specific water quality plan devel-
18 oped pursuant to subsection (f).”;

19 (D) in paragraph (12), by inserting “and
20 incentive grants” after “demonstration
21 projects”; and

22 (E) by adding at the end the following new
23 paragraph:

24 “(13) FAILURE TO IMPLEMENT.—If the Admin-
25 istrator determines that a State has substantially

1 failed to implement a plan, or develop site-specific
2 water quality plans, the Administrator shall withhold
3 not less than 25 percent, and not more than 50 per-
4 cent, of the funds that would otherwise have been
5 available to the State pursuant to this subsection.
6 The amount of funds withheld pursuant to this
7 paragraph shall be allocated to States with a pro-
8 gram approved by the Administrator pursuant to
9 subsection (b) and local management programs with-
10 in the States that have been approved pursuant to
11 subsection (e).”; and

12 (2) in subsection (j), by inserting after the first
13 sentence the following new sentence: “There are au-
14 thorized to be appropriated to carry out subsection
15 (h) an amount not to exceed \$300,000,000 for fiscal
16 year 1995, \$500,000,000 for each of fiscal years
17 1996 through 1998, and \$600,000,000 for each of
18 fiscal years 1999 and 2000.”.

19 (c) **SITE-SPECIFIC WATER QUALITY PLANS.**—Sub-
20 section (f) of section 319 (33 U.S.C. 1329(f)) is amended
21 to read as follows:

22 “(f) **SITE-SPECIFIC WATER QUALITY PLANS.**—

23 “(1) **IN GENERAL.**—

24 “(A) **SITE-SPECIFIC WATER QUALITY**
25 **PLANS.**—Each source, including an agricultural

1 source, that is located in the watershed area of
2 a water listed pursuant to subsection (a)(1)
3 may implement a site-specific water quality
4 plan in lieu of implementing management meas-
5 ures, as described in subsection (c).

6 “(B) Each plan developed pursuant to this
7 subsection shall be approved by the appropriate
8 official of a Federal agency or State agency, as
9 specified in the plan developed under subsection
10 (b). With respect to agricultural sources that
11 implement a plan referred to in the preceding
12 sentence, the Secretary of Agriculture shall as-
13 sist the States in the development and imple-
14 mentation of the plans to the fullest extent
15 practicable.

16 “(2) REQUIREMENTS FOR PLAN.—

17 “(A) IN GENERAL.—Each plan developed
18 pursuant to this subsection shall—

19 “(i) provide for the implementation of
20 management measures that are appro-
21 priate to the site, economically achievable
22 by the owner or operator of the source,
23 and will reduce water pollution;

1 “(ii) recognize and incorporate appro-
2 priate management measures in place at
3 the site at the time the plan is developed;

4 “(iii) establish schedules for the im-
5 plementation of management measures as
6 expeditiously as practicable, but not later
7 than 3 years after the date of initiation of
8 the plan;

9 “(iv) provide for a periodic assessment
10 of the implementation of the plan and the
11 effect of management measures; and

12 “(v) terminate on the date that is 5
13 years after the date of initiation of the
14 plan.

15 “(B) MAINTENANCE.—After an initial plan
16 has been prepared pursuant to this subsection,
17 each subsequent plan prepared pursuant to this
18 subsection shall provide for the maintenance of
19 appropriate measures that have been incor-
20 porated in a preceding plan, unless the appro-
21 priate official determines that a measure is no
22 longer necessary to maintain water quality
23 standards.

24 “(3) HANDBOOK.—Not later than 18 months
25 after the date of enactment of this paragraph, and

1 as appropriate thereafter, the Administrator, in con-
2 sultation with the Secretary of Agriculture and the
3 heads of other appropriate Federal agencies and the
4 States, shall publish a handbook to assist the devel-
5 opment of plans for agricultural sources pursuant to
6 this subsection.

7 “(4) EFFECT OF CONSERVATION COMPLIANCE
8 PLAN.—

9 “(A) IN GENERAL.—Any agricultural
10 source required to have a plan prepared pursu-
11 ant to this subsection that has satisfied a con-
12 servation compliance plan developed pursuant
13 to subtitle B of title 12 of the Food Security
14 Act of 1985 (16 U.S.C. 3830 et seq.) shall be
15 deemed to satisfy the requirement of paragraph
16 (1) until the date specified in subsection (a)(3).

17 “(B) SUBSEQUENT PERIOD.—After the
18 date specified in subsection (a)(3), a conserva-
19 tion compliance plan that meets the applicable
20 requirements of a comprehensive watershed
21 management plan developed under section 321
22 shall be deemed to satisfy the requirements of
23 paragraph (1).”

24 (d) FEDERAL PROGRAM COORDINATION.—

25 (1) AGRICULTURAL COST-SHARE PROGRAMS.—

1 (A) AMENDMENTS TO THE SOIL CON-
2 SERVATION AND DOMESTIC ALLOTMENT ACT.—

3 (i) PREVENTION OF SOIL EROSION.—

4 The first sentence of section 7(a) of the
5 Soil Conservation and Domestic Allotment
6 Act (16 U.S.C. 590g(a)) is amended by in-
7 serting “, giving priority consideration to
8 watersheds of waters identified pursuant to
9 section 319(a) of the Federal Water Pollu-
10 tion Control Act (33 U.S.C. 1329(a))” be-
11 fore the period.

12 (ii) PRIORITY FOR CERTAIN WATER-
13 SHEDS.—The fourth undesignated para-
14 graph of section 8(b) of the Soil Conserva-
15 tion and Domestic Allotment Act (16
16 U.S.C. 590h(b)) is amended by inserting
17 before the comma at the end of subpara-
18 graph (D) the following: “, giving priority
19 consideration to watersheds of waters iden-
20 tified pursuant to section 319(a) of the
21 Federal Water Pollution Control Act (33
22 U.S.C. 1329(a))”.

23 (B) AGRICULTURAL WATER QUALITY PRO-
24 TECTION PROGRAM.—Section 1238C(a) of the

1 Food Security Act of 1985 (16 U.S.C.
2 3838c(a)) is amended—

3 (i) in paragraph (7), by striking “or”
4 at the end;

5 (ii) in paragraph (8), by striking the
6 period at the end and inserting “; or”; and

7 (iii) by adding at the end the follow-
8 ing new paragraph:

9 “(9) the watershed of a water identified pursu-
10 ant to section 319(a) of the Federal Water Pollution
11 Control Act (33 U.S.C. 1329(a)).”.

12 (C) ENVIRONMENTAL EASEMENT PRO-
13 GRAM.—Section 1239(b)(1) of the Food Secu-
14 rity Act of 1985 (16 U.S.C. 3839(b)(1)) is
15 amended—

16 (i) in subparagraph (B), by striking
17 “or” at the end;

18 (ii) in subparagraph (C), by striking
19 the period at the end and inserting “; or”;
20 and

21 (iii) by adding at the end the follow-
22 ing new subparagraph:

23 “(D) is located within the watershed of a
24 water identified pursuant to section 319(a) of

1 the Federal Water Pollution Control Act (33
2 U.S.C. 1329(a)).”.

3 (D) CONSERVATION PRIORITY AREAS.—
4 Section 1231(f)(1) of the Food Security Act of
5 1985 (16 U.S.C. 3831(f)(1)) is amended by
6 adding at the end the following new sentence:
7 “The Secretary shall designate watershed areas
8 of waters identified pursuant to section 319(a)
9 of the Federal Water Pollution Control Act (33
10 U.S.C. 1329(a)) as conservation priority
11 areas.”.

12 (2) CONSERVATION RESERVE PROGRAM.—Sec-
13 tion 319(k) (33 U.S.C. 1329(k)) is amended—

14 (A) by striking “The Administrator shall
15 transmit” and inserting the following:

16 “(1) IN GENERAL.—The Administrator shall
17 transmit”; and

18 (B) by adding at the end the following new
19 paragraphs:

20 “(2) AGRICULTURAL PROGRAM COORDINA-
21 TION.—

22 “(A) IN GENERAL.—The Administrator
23 shall provide technical assistance to the Sec-
24 retary of Agriculture with respect to utilizing
25 the authorities of the Secretary to reduce agri-

1 cultural and related sources of nonpoint source
2 pollution in a manner consistent with subtitle D
3 of title XII of the Food Security Act of 1985
4 (16 U.S.C. 3830 et seq.).

5 “(B) IDENTIFICATION OF LANDS.—Not
6 later than 1 year after the date of enactment of
7 this paragraph, and annually thereafter, the
8 Administrator shall identify, on the basis of the
9 assessment reports submitted by the States and
10 approved by the Administrator under subsection
11 (a) (or developed by the Administrator for the
12 States pursuant to subsections (a), (d), and (e))
13 and such other information as is available to
14 the Administrator, those lands that, if enrolled
15 in the conservation reserve program of the De-
16 partment of Agriculture, would contribute to
17 the protection of the environment by reducing
18 nonpoint source pollution. If appropriate, the
19 lands identified may include lands that are not
20 erodible but that pose an off-farm environ-
21 mental threat, as determined pursuant to sec-
22 tion 1231(c)(2) of the Food Security Act of
23 1985 (16 U.S.C. 3831(c)(2)).

24 “(C) PROVISION OF LIST TO SECRETARY
25 OF AGRICULTURE.—The Administrator shall

1 furnish the list of the lands identified pursuant
 2 to subparagraph (B) to the Secretary of Agri-
 3 culture to assist the Secretary in establishing
 4 priorities for expenditures under the conserva-
 5 tion reserve program and shall make the list
 6 available to the States and to the public.

7 “(D) RESPONSE TO LIST.—Not later than
 8 180 days after receiving the list referred to in
 9 subparagraph (C), the Secretary shall provide
 10 the Administrator with a report that describes
 11 the actions the Secretary will take to respond to
 12 the list. The Secretary shall provide a detailed
 13 explanation of any recommendation of the Ad-
 14 ministrator that the Secretary will not imple-
 15 ment.”.

16 (3) FEDERAL LANDS AND HIGHWAYS.—Sub-
 17 section (l) of section 319 (33 U.S.C. 1329(l)) is
 18 amended to read as follows:

19 “(l) FEDERAL LANDS AND HIGHWAYS.—

20 “(1) FEDERAL LANDS.—

21 “(A) IN GENERAL.—The President shall
 22 direct the heads of appropriate Federal agencies
 23 that own or manage land to implement regula-
 24 tions that shall take effect not later than the
 25 date of enactment of this paragraph, to ensure

1 the implementation of appropriate measures to
2 control nonpoint sources of water pollution, in-
3 cluding, at a minimum—

4 “(i) management measures identified
5 pursuant to subsection (c) for new sources;
6 and

7 “(ii) for a watershed area of a water
8 identified pursuant to subsection (a), the
9 implementation of management measures
10 identified pursuant to subsection (c) or the
11 implementation of a site-specific water
12 quality plan pursuant to subsection (f).

13 “(B) SCHEDULES; EFFECTIVE DATE.—

14 “(i) SCHEDULES.—Each schedule for
15 the development of management measures
16 and site-specific water quality plans, and
17 each schedule for the implementation of
18 the measures or plans, shall be consistent
19 with any schedule established by a State
20 under a program established by the State
21 pursuant to subsection (b).

22 “(ii) EFFECTIVE DATE.—The require-
23 ments of this paragraph shall take effect
24 on a date specified by the President, but

1 not later than 3 years after the date of en-
2 actment of this paragraph.

3 “(C) AUTHORITIES.—Any license, permit,
4 contract, special use permit, lease, agreement,
5 claim, or related operational authority between
6 a Federal agency and any person authorizing
7 activities on Federal lands in effect on the day
8 before the date specified in subparagraph
9 (B)(ii) may remain in effect for the term of the
10 authority or a period of 5 years (beginning on
11 the date specified in subparagraph (B)(ii)),
12 whichever is less.

13 “(D) STATUTORY CONSTRUCTION.—Noth-
14 ing in this paragraph is intended to limit or
15 constrain the authority of a State or the Ad-
16 ministrator to require the implementation of
17 such additional controls over nonpoint sources
18 of pollution on Federal lands as may be nec-
19 essary to attain and maintain standards adopt-
20 ed pursuant to section 303 or other require-
21 ments of this Act.

22 “(2) HIGHWAY CONSTRUCTION.—

23 “(A) IN GENERAL.—The Administrator, in
24 cooperation with the Secretary of Transpor-
25 tation, shall develop measures and practices to

1 prevent water pollution resulting from highway
2 construction and promote the implementation of
3 the measures and practices.

4 “(B) CERTAIN PROJECTS.—The guidelines
5 developed by the Secretary of Transportation
6 pursuant to section 1057 of the Intermodal
7 Surface Transportation Efficiency Act of 1991
8 (Public Law 102–240; 105 Stat. 2002) shall, at
9 a minimum, require the implementation of man-
10 agement measures specified under subsection
11 (c) in the case of any construction project fund-
12 ed in whole or in part under title I of such Act.
13 The Secretary shall withhold funds for any
14 project referred to in the preceding sentence
15 unless the Secretary determines that the project
16 will comply with the guidelines.”.

17 (e) ANIMAL WASTE MANAGEMENT FACILITIES.—
18 Section 319 (33 U.S.C. 1329) is amended by adding at
19 the end the following new subsection:

20 “(o) ANIMAL WASTE MANAGEMENT FACILITIES.—

21 “(1) IN GENERAL.—Not later than 2 years
22 after the date of enactment of this paragraph, the
23 Administrator, in consultation with the Secretary of
24 Agriculture, shall publish guidelines for the design of

1 animal waste management facilities. The guidelines
2 shall include—

3 “(A) general standards concerning the
4 proper design of facilities;

5 “(B) minimum elements of plans for con-
6 struction of facilities at a specific site;

7 “(C) specifications concerning minimum
8 construction standards; and

9 “(D) such other requirements and informa-
10 tion as, in the judgment of the Administrator,
11 are necessary and appropriate.

12 “(2) PLAN.—Any person may submit to the
13 Administrator (or in the case of a State with a plan
14 approved by the Administrator under subsection (d),
15 the State) a plan for the construction of an animal
16 waste management facility. Each plan shall—

17 “(A) be consistent with the guidelines de-
18 veloped pursuant to paragraph (1) and sub-
19 section (c); and

20 “(B) include an estimate of the total cost
21 for the construction of the facility.

22 “(3) PLAN APPROVAL.—The Administrator,
23 with the concurrence of the Secretary of Agriculture,
24 shall review and approve or disapprove any plan for
25 the construction of an animal waste management fa-

1 cility submitted pursuant to this subsection. Upon
2 approval of a plan, the facility shall be eligible for
3 assistance under title VI.

4 “(4) TECHNICAL ASSISTANCE.—The Secretary
5 of Agriculture may provide technical assistance to
6 persons concerning the design of animal waste man-
7 agement facilities. The assistance may include the
8 design of facilities to account for site-specific condi-
9 tions and the integration of the facilities into related
10 agricultural activities.

11 “(5) DEFINITION.—As used in this subsection,
12 the term ‘animal waste management facility’ means
13 a facility for the storage, treatment, or disposal of
14 animal waste.”.

15 (f) SUBSURFACE SEWAGE DISPOSAL.—Section 319
16 (33 U.S.C. 1329), as amended by subsection (e), is further
17 amended by adding at the end the following new sub-
18 section:

19 “(p) SUBSURFACE SEWAGE DISPOSAL.—

20 “(1) IN GENERAL.—Not later than 2 years
21 after the date of enactment of this subsection, the
22 Administrator shall publish guidelines for the design,
23 operation, and management of publicly owned sub-
24 surface sewage organizations.

1 “(2) OPERATION AND MANAGEMENT STAND-
2 ARDS.—The guidelines published pursuant to this
3 subsection shall provide such standards of operation
4 and management as the Administrator determines to
5 be necessary to ensure that subsurface sewage dis-
6 posal units operated by an organization referred to
7 in paragraph (1) will provide treatment adequate to
8 protect water quality .

9 “(3) CONTENTS OF GUIDELINES.—At a mini-
10 mum, the guidelines published pursuant to this sub-
11 section shall—

12 “(A) specify standards for the design and
13 location of new subsurface sewage disposal sys-
14 tems;

15 “(B) specify maintenance requirements
16 and schedules for existing systems (existing at
17 the time of publication of the guidelines);

18 “(C) establish financial management and
19 control practices, including a requirement for a
20 user charge sufficient to ensure the effective op-
21 eration of each system;

22 “(D) require appropriate provision for
23 management or disposal of waste material for
24 systems; and

1 “(E) address such other matters as the
2 Administrator determines to be appropriate.

3 “(4) PLAN.—Beginning on the date that is 2
4 years after the date of enactment of this subsection,
5 any person may submit to the Administrator (or in
6 the case of a State with a plan approved under sub-
7 section (d), the State) a plan for the establishment
8 of a subsurface sewage disposal organization pursu-
9 ant to this subsection.

10 “(5) APPROVAL OF PLAN.—The Administrator,
11 with the concurrence of the State, shall approve the
12 plan if the Administrator determines that the plan
13 meets the requirements of this subsection. Upon ap-
14 proval of the plan, the organization shall be eligible
15 for assistance pursuant to title VI.”.

16 (g) STATE WATER LAW.—Section 319 (33 U.S.C.
17 1329), as amended by subsection (f), is further amended
18 by adding at the end the following new subsection:

19 “(q) STATE WATER LAW.—Nothing in this section
20 is intended to supersede, abrogate, or otherwise impair the
21 right of any State to allocate quantity of water within the
22 State.”.

1 **TITLE IV—MUNICIPAL**
2 **POLLUTION CONTROL**

3 **SEC. 401. COMBINED SEWER OVERFLOWS.**

4 Section 402 (33 U.S.C. 1342), as amended by section
5 205(b), is further amended by adding at the end the fol-
6 lowing new subsection:

7 “(r) COMBINED SEWER OVERFLOWS.—

8 “(1) REQUIREMENT FOR PERMITS.—Each per-
9 mit issued pursuant to this section for a discharge
10 from a combined storm and sanitary sewer shall con-
11 form with the combined sewer overflow control policy
12 published by the Administrator at 58 Fed. Reg.
13 4994 (January 19, 1993).

14 “(2) TERM OF PERMIT.—Notwithstanding any
15 compliance schedule under section 301(b), or any
16 permit limitation under section 402(b)(1)(B), the
17 Administrator may issue a permit pursuant to this
18 section for a discharge from a combined storm and
19 sanitary sewer, that includes a schedule for compli-
20 ance with a long-term control plan under the control
21 policy referred to in paragraph (1) for a term not
22 to exceed 15 years. Notwithstanding the compliance
23 deadline specified in the preceding sentence, the Ad-
24 ministrator may, on request of an owner or operator
25 of a combined storm and sanitary sewer, extend the

1 period of compliance beyond the date specified if the
2 Administrator determines that compliance by the
3 date is not within the economic capability of the
4 owner or operator, or if the Administrator deter-
5 mines that an extension is otherwise appropriate.

6 “(3) BACTERIA.—A permitting authority may
7 not issue a permit under paragraph (2) unless, after
8 the date of enactment of this subsection—

9 “(A) the Administrator has reviewed and
10 approved the water quality standards for bac-
11 teria adopted by the State in which the dis-
12 charger is located; or

13 “(B) the criteria are published in the water
14 quality criteria for bacteria published by the
15 Administrator as described in 51 Fed. Reg.
16 8012 (March 7, 1986).”.

17 **SEC. 402. STORMWATER MANAGEMENT.**

18 Section 402(p) (33 U.S.C. 1342(p)) is amended—

19 (1) by striking paragraph (1);

20 (2) by redesignating paragraph (2) as para-
21 graph (1);

22 (3) in paragraph (1) (as so redesignated)—

23 (A) by striking the matter preceding sub-
24 paragraph (A) and inserting the following:

1 “(1) IN GENERAL.—A permit issued under this
2 section shall be required for each of the following
3 discharges composed entirely of stormwater.”; and

4 (B) by adding at the end the following new
5 subparagraph:

6 “(F) A discharge from a municipal sepa-
7 rate storm sewer system serving a population of
8 fewer than 100,000 individuals covered by a
9 permit issued under subparagraph (C) or (D)
10 that is located in an urbanized area (as des-
11 ignated by the Bureau of the Census of the De-
12 partment of Commerce), except that the re-
13 quirements of this subparagraph shall apply be-
14 ginning on the date of the first reissuance of a
15 permit for a discharge under subparagraph (C)
16 or (D) for the same urbanized area that occurs
17 after the date that is 3 years after the date of
18 enactment of this subparagraph.”;

19 (4) by inserting after paragraph (1) (as so re-
20 designated) the following new paragraph:

21 “(2) OTHER STORMWATER DISCHARGES.—Ex-
22 cept as provided in paragraph (1)(E), the Adminis-
23 trator (or the State, in the case of a State with the
24 authority to issue permits under this section) may

1 not require a permit under this section for a dis-
2 charge composed entirely of stormwater if—

3 “(A) the discharge is from a municipal
4 separate storm sewer system serving a popu-
5 lation of fewer than 100,000 individuals that is
6 not located in an urbanized area (as designated
7 by the Bureau of the Census of the Department
8 of Commerce) covered by a permit issued under
9 subparagraph (C) or (D) of paragraph (1);

10 “(B) the discharge is from a construction
11 activity that disturbs an area of less than 5
12 acres, except that a discharge from a construc-
13 tion activity that disturbs an area of greater
14 than 1 acre and less than 5 acres in an urban-
15 ized area (as designated by the Bureau of the
16 Census of the Department of Commerce) sub-
17 ject to permit requirements under subparagraph
18 (C), (D), or (F) of paragraph (1) shall be re-
19 quired to have a permit if a State or local
20 stormwater management program does not im-
21 pose controls on the discharge; or

22 “(C) the discharge is from a gasoline sta-
23 tion, except that a discharge from a gasoline
24 station in an urbanized area (as designated by
25 the Bureau of the Census of the Department of

1 Commerce) subject to permit requirements
2 under subparagraph (C), (D), or (F) of para-
3 graph (1) shall be required to have a permit if
4 a State or local stormwater management pro-
5 gram does not impose controls on the dis-
6 charge.”;

7 (5) in paragraph (3), by adding at the end the
8 following new subparagraph:

9 “(C) MAXIMUM EXTENT PRACTICABLE DE-
10 FINED.—

11 “(i) IN GENERAL.—For the purposes
12 of subparagraph (B)(iii) and permits is-
13 sued not later than 2 years after the date
14 of enactment of this subparagraph, the
15 term ‘maximum extent practicable’ means
16 applying management measures, as defined
17 in section 6217(g)(5) of the Coastal Zone
18 Act Reauthorization Amendments of 1990
19 (16 U.S.C. 1455b(g)(5)), in the manner
20 prescribed in guidance issued pursuant to
21 such section.

22 “(ii) EXPANDED DEFINITION.—For
23 the purposes specified in clause (i), after
24 the date that is 2 years after the date of
25 enactment of this subparagraph, the term

1 ‘maximum extent practicable’ has the
2 meaning provided in clause (i), except that
3 the term also includes applying other ap-
4 propriate management measures in a man-
5 ner prescribed by the Administrator in
6 guidance. The Administrator shall issue
7 the guidance not later than 2 years after
8 the date of enactment of this subpara-
9 graph.”;

10 (6) in paragraph (4), by striking “(2)” each
11 place it appears and inserting “(1)”; and

12 (7) by striking paragraphs (5) and (6) and in-
13 serting the following new paragraphs:

14 “(5) MONITORING AND REPORTING REQUIRE-
15 MENTS.—Each municipality subject to the require-
16 ments of this subsection shall be subject to—

17 “(A) monitoring requirements for the qual-
18 ity of receiving waters; and

19 “(B) reporting requirements for the imple-
20 mentation of management measures.

21 “(6) REVISED MUNICIPAL PERMITS.—

22 “(A) IN GENERAL.—Not later than 5 years
23 after the initial date of issuance of a permit
24 under paragraph (4), the Administrator (or the
25 State, in the case of a State with the authority

1 to issue permits under this section) shall review
2 each permit issued under such paragraph and
3 include in each reissued permit management
4 measures that ensure the attainment and main-
5 tenance of water quality standards and the re-
6 quirements of the guidance referred to in para-
7 graph (3)(C).

8 “(B) WAIVER.—With respect to a permit
9 issued under this paragraph, during the term of
10 the permit, the Administrator may not require
11 compliance with a numeric effluent limitation or
12 a water quality standard.

13 “(7) DELAYED COMPLIANCE.—During the 10-
14 year period beginning on the date of enactment of
15 this paragraph, the Administrator (or the State, in
16 the case of a State with the authority to issue per-
17 mits under this section) may not require, in a permit
18 issued under this subsection, compliance with a
19 numeric effluent limitation or a water quality stand-
20 ard directly, except as reflected in management
21 measures required under paragraph (6)(A).

22 “(8) NATIONAL SOURCE CONTROLS.—

23 “(A) IN GENERAL.—The Administrator
24 shall—

1 “(i) identify and assess the relative
2 degree of contribution of pollutants to
3 stormwater from various sources (including
4 household products, motor vehicles, and
5 other sources); and

6 “(ii) assess the availability and cost of
7 alternatives and substitutes for the pollut-
8 ants identified pursuant to clause (i).

9 “(B) SUBSTITUTIONS OR REDUCTIONS.—
10 In any case in which the Administrator deter-
11 mines that—

12 “(i) a pollutant found in stormwater
13 causes or contributes to a significant im-
14 pairment in water quality or a significant
15 violation of water quality standards as a
16 result of a discharge of the pollutant in
17 stormwater; and

18 “(ii) a reasonably available and eco-
19 nomically achievable alternative or sub-
20 stitute to the pollutant, or the source asso-
21 ciated with the pollutant, is available,
22 the Administrator may, by regulation, require
23 each manufacturer of the pollutant or source of
24 the pollutant to implement a phased substi-
25 tution or reduction in the manufacture of the

1 pollutant or source in accordance with a sched-
2 ule that takes into account the cost of the sub-
3 stitution or reduction.

4 “(C) REPORT.—Not later than 2 years
5 after the date of enactment of this paragraph,
6 and biennially thereafter, the Administrator
7 shall submit a report to Congress that describes
8 the implementation of this paragraph.”.

9 **SEC. 403. WATER CONSERVATION.**

10 Section 113 (33 U.S.C. 1263) is amended to read as
11 follows:

12 **“SEC. 113. WATER CONSERVATION.**

13 **“(a) INTERGOVERNMENTAL COORDINATION.—**

14 **“(1) IN GENERAL.—**The Environmental Protec-
15 tion Agency shall be the primary coordinator for all
16 policies of the Federal Government related to munic-
17 ipal, commercial, residential, and industrial water
18 conservation.

19 **“(2) CONSULTATION WITH AGENCY HEADS.—**

20 To carry out this section, the Secretary of the Army,
21 acting through the Chief of Engineers of the Army
22 Corps of Engineers, shall, to the greatest extent
23 practicable, consult with the heads of other Federal
24 agencies that participate in water resource planning,
25 development, and management.

1 “(3) CONSULTATION WITH OTHER OFFI-
2 CIALS.—To carry out this section, the Secretary of
3 the Army, acting through the Chief of Engineers of
4 the Army Corps of Engineers, shall, to the greatest
5 extent practicable, consult with appropriate officials
6 of State and local governments, educational institu-
7 tions, trade associations, scientific organizations,
8 businesses, and other organizations with expertise
9 and experience with respect to water conservation.

10 “(b) TECHNICAL ASSISTANCE TO STATES AND MU-
11 NICIPALITIES.—

12 “(1) IN GENERAL.—The Secretary of the Army,
13 acting through the Chief of Engineers of the Army
14 Corps of Engineers, acting alone or through a con-
15 tracting party, is authorized to provide technical as-
16 sistance to States, public and private water utilities,
17 local governmental entities, and other appropriate
18 public agencies and authorities with respect to—

19 “(A) conducting a promotional and edu-
20 cational campaign to encourage consumers to
21 use water more efficiently;

22 “(B) implementing financial or other in-
23 centives for users of water to conserve water,
24 including universal metering of water users and

1 the reform of water rates to promote conserva-
2 tion;

3 “(C) detecting and correcting leaks in
4 water distribution and collection systems;

5 “(D) promoting, distributing, and install-
6 ing water-saving technologies, fixtures, or
7 equipment for users of water;

8 “(E) incorporating water-saving tech-
9 nologies into building codes and standards;

10 “(F) establishing coordinated regional
11 management of water and sewer systems;

12 “(G) auditing water use;

13 “(H) reclaiming, recycling, and reusing
14 wastewater;

15 “(I) promoting water-efficient vegetative
16 cover and landscaping; and

17 “(J) otherwise achieving beneficial reduc-
18 tions in water use or water loss.

19 “(2) DUTIES OF THE SECRETARY OF THE
20 ARMY.—

21 “(A) IN GENERAL.—The Secretary of the
22 Army, acting through the Chief of Engineers of
23 the Army Corps of Engineers, shall, on a regu-
24 lar basis, make available information to poten-
25 tial recipients of the assistance referred to in

1 paragraph (1) concerning the programs, offer-
2 ings, and activities of Federal agencies with re-
3 spect to water conservation.

4 “(B) CONSULTATION.—In order to better
5 target limited resources to potential recipients,
6 the Secretary of the Army, acting through the
7 Chief of Engineers of the Army Corps of Engi-
8 neers, shall consult, on a regular basis, with the
9 heads of other Federal water resources develop-
10 ment agencies to determine which States, areas,
11 water utilities, and municipalities are experienc-
12 ing water capacity shortfalls or will likely expe-
13 rience the shortfalls.

14 “(3) MODEL WATER CONSERVATION PRO-
15 GRAMS.—The Secretary of the Army, acting through
16 the Chief of Engineers of the Army Corps of Engi-
17 neers, shall develop, update, maintain, and dissemi-
18 nate a series of model water conservation programs
19 for States, water utilities, and municipalities.

20 “(4) REQUESTS FOR STUDY.—

21 “(A) IN GENERAL.—Any water utility or
22 municipality may request the Secretary of the
23 Army, acting through the Chief of Engineers of
24 the Army Corps of Engineers, to—

1 “(i) undertake a study of the feasibility,
2 impacts, costs, and benefits of then
3 current and potential water conservation
4 activities; and

5 “(ii) recommend actions for beneficial
6 reductions in water use or loss.

7 “(B) PRIORITIES.—The Secretary of the
8 Army, acting through the Chief of Engineers of
9 the Army Corps of Engineers, shall give priority
10 to the water conservation studies referred to in
11 subparagraph (A) on the basis of the potential
12 for—

13 “(i) protection of the environment;
14 and

15 “(ii) reducing costs to Federal, State,
16 and local governments for water supply
17 and wastewater treatment facilities.

18 “(C) AMOUNT OF ASSISTANCE.—The
19 amount of Federal funds for a water conserva-
20 tion study under this subsection of any State,
21 water utility, or municipality serving more than
22 5,000 individuals shall be not less than 50 per-
23 cent of the cost of the study. The Secretary of
24 the Army, acting through the Chief of Engi-
25 neers of the Army Corps of Engineers, may

1 waive the 50 percent matching requirement for
2 a water utility or municipality that serves a
3 population of fewer than 5,000 individuals.

4 “(5) REVIEWS.—

5 “(A) IN GENERAL.—The Secretary of the
6 Army, acting through the Chief of Engineers of
7 the Army Corps of Engineers, shall collect in-
8 formation concerning water conservation
9 projects, including projects assisted under para-
10 graph (4), and make the information widely
11 available to the public in a timely manner.

12 “(B) REQUIREMENTS FOR REVIEWS.—The
13 reviews shall—

14 “(i) evaluate the effectiveness of var-
15 ious water conservation measures; and

16 “(ii) provide information to assist the
17 Secretary in providing technical assistance.

18 “(c) TECHNICAL ASSISTANCE TO BUSINESSES AND
19 INSTITUTIONS.—The Secretary of the Army, acting
20 through the Chief of Engineers of the Army Corps of En-
21 gineers, may provide assistance that is comparable to the
22 assistance provided under subsection (b) to businesses and
23 other persons. The Federal cost of the assistance shall be
24 fully reimbursed by the recipient of the assistance.

1 “(d) NATIONAL CLEARINGHOUSE ON WATER CON-
2 SERVATION.—

3 “(1) IN GENERAL.—The Administrator shall es-
4 tablish a national clearinghouse on water conserva-
5 tion (referred to in this subsection as the ‘clearing-
6 house’) to—

7 “(A) collect, analyze, and disseminate in-
8 formation on water conservation technologies
9 and practices; and

10 “(B) promote the widespread adoption of
11 the technologies and practices referred to in
12 subparagraph (A) by public and private water
13 utilities, and commercial, industrial, and resi-
14 dential consumers.

15 “(2) REQUIREMENTS FOR INFORMATION.—The
16 information referred to in paragraph (1) shall in-
17 clude information referred to in, and information ob-
18 tained under, subsections (b) and (c).

19 “(3) COLLECTION OF INFORMATION.—The
20 clearinghouse shall collect reliable water conservation
21 information. On request, the Administrator shall
22 provide the information to Federal agencies, States,
23 local governments, other appropriate public agencies
24 and authorities, nonprofit institutions and organiza-
25 tions, businesses and industries, researchers, private

1 individuals, and other persons and entities in a posi-
 2 tion to derive or increase the public benefits offered
 3 by the technologies, methods, and practices related
 4 to water conservation described in this subsection.

5 “(e) AUTHORIZATION OF APPROPRIATIONS.—There
 6 are authorized to be appropriated to carry out this section
 7 an amount not to exceed \$10,000,000 for each of fiscal
 8 years 1994 through 2000, of which not less than \$500,000
 9 for each fiscal year are authorized to be appropriated to
 10 the Environmental Protection Agency to carry out sub-
 11 section (d).”.

12 **TITLE V—PERMIT PROGRAM** 13 **AND ENFORCEMENT**

14 **SEC. 501. PERMIT FEES.**

15 (a) IN GENERAL.—Section 402 (33 U.S.C. 1342), as
 16 amended by section 401, is further amended by adding
 17 at the end the following new subsection:

18 “(s) PERMIT FEES.—

19 “(1) IN GENERAL.—

20 “(A) MODIFICATION.—

21 “(i) IN GENERAL.—Not later than 2
 22 years after the date of enactment of this
 23 subsection, or the applicable date specified
 24 in clause (ii), the Governor of each State
 25 that administers a permit program under

1 subsection (b) shall submit to the Adminis-
2 trator, for approval, a modification of the
3 permit program of the State that includes
4 a requirement under State law that—

5 “(I) the owner or operator of cer-
6 tain point sources (as determined by
7 the State) subject to the requirement
8 to obtain a permit under this section
9 or a permit for the disposal of sewage
10 sludge under section 405; and

11 “(II) an industrial user of a pub-
12 licly owned treatment works subject to
13 a Federal or State permit, or equiva-
14 lent individual control mechanism,
15 concerning the pretreatment of toxic
16 or nonconventional pollutants for in-
17 troduction into the treatment works,
18 pay an annual fee (or the equivalent, over
19 another specified period of time).

20 “(ii) EXTENSION.—If a State has a
21 legislature that is not scheduled to meet in
22 a legislative session in which legislation to
23 carry out this subparagraph may be en-
24 acted by the date specified in clause (i),
25 the State shall carry out the requirements

1 of clause (i) not later than the date of ad-
2 journeyment of the first regular legislative
3 session of a State in which legislation to
4 carry out this subsection may be consid-
5 ered.

6 “(B) ACCUMULATED AMOUNT OF FEES.—
7 The total amount collected as fees for any year
8 in a State shall be a sufficient amount to cover
9 not less than 60 percent of the costs of develop-
10 ing and administering point source elements of
11 the water quality program, and the costs of de-
12 veloping and administering sewage sludge dis-
13 posal and pretreatment programs, of the State,
14 including the costs of—

15 “(i) reviewing and acting upon appli-
16 cations for permits;

17 “(ii) implementing and enforcing the
18 terms and conditions of permits or equiva-
19 lent individual control mechanisms (exclud-
20 ing any court costs);

21 “(iii) effluent and ambient water qual-
22 ity monitoring;

23 “(iv) preparing generally applicable
24 regulations or guidance, including water
25 quality standards;

1 “(v) modeling, planning, analyses, and
2 demonstrations;

3 “(vi) preparing and maintaining pub-
4 lic information systems concerning effluent
5 limitations, discharges, compliance, and
6 water quality; and

7 “(vii) evaluating the performance of
8 laboratories that analyze monitoring sam-
9 ples (including laboratory inspections, lab-
10 oratory audits, and quality assurance).

11 “(2) USE OF FEES.—

12 “(A) IN GENERAL.—Each fee required to
13 be collected by a State under this subsection
14 shall be used only to support the water quality
15 programs of the State.

16 “(B) RESTRICTION ON USE.—Except as
17 provided in subparagraph (C), the fees collected
18 pursuant to this subsection may not be used to
19 provide State matching funds for Federal funds
20 made available to the State pursuant to section
21 106.

22 “(C) USE FOR MATCHING FUNDS.—A
23 State may use any amount collected by the
24 State as fees pursuant to this subsection in ex-
25 cess of the minimum amount specified in para-

1 graph (1)(B) to provide matching funds for
2 Federal funds made available to the State pur-
3 suant to section 106.

4 “(3) FEDERAL FEE PROGRAM.—

5 “(A) FEDERAL PROGRAM OF FEE ASSESS-
6 MENT.—Not later than 3 years after the date
7 of enactment of this subsection, the Adminis-
8 trator shall establish a Federal program for the
9 collection of fees under this subsection.

10 “(B) CONDITIONS THAT REQUIRE IMPLI-
11 MENTATION OF FEDERAL PROGRAM.—If the
12 Administrator, upon review of the permit modi-
13 fications submitted by a State pursuant to
14 paragraph (1), or upon conducting a subse-
15 quent review pursuant to subparagraph (C), de-
16 termines that—

17 “(i) the fee provisions under the modi-
18 fied permit program submitted by a State
19 to the Administrator for approval pursuant
20 to paragraph (1) do not meet the require-
21 ments of this subsection;

22 “(ii) a State is not adequately admin-
23 istering or enforcing a fee system referred
24 to in paragraph (1) that has been approved
25 by the Administrator; or

1 “(iii) a State does not have the au-
2 thority to administer a permit program
3 pursuant to subsection (b),
4 the Administrator shall, not later than 3 years
5 after the date of enactment of this subsection,
6 or with respect to a finding described in clause
7 (ii) not later than 180 days after making the
8 finding, assess and collect fees from sources re-
9 ferred to in paragraph (1) pursuant to the pro-
10 gram referred to in subparagraph (A).

11 “(C) REVIEW BY ADMINISTRATOR.—The
12 Administrator may, at any time after approving
13 the modifications of the permit program of a
14 State under paragraph (1), review the fees as-
15 sessed by the State pursuant to the modifica-
16 tions. The Administrator shall review the fees
17 assessed by the State not later than 5 years
18 after the date of approval of the modifications,
19 and not less frequently than every 5 years
20 thereafter.

21 “(D) SUBSEQUENT ESTABLISHMENT OF
22 STATE PROGRAM.—At any time after the Ad-
23 ministrator implements a program to assess
24 fees pursuant to subparagraph (A), if the Ad-
25 ministrator determines that a State program to

1 assess fees meets the requirements of this sub-
2 section and the State has adequate authority to
3 assess the fees, the Administrator may approve
4 the State program and terminate the applica-
5 tion of the Federal program to the State.

6 “(E) FEDERAL WATER POLLUTION CON-
7 TROL PERMIT FUND.—

8 “(i) ESTABLISHMENT.—There is es-
9 tablished in the United States Treasury a
10 Federal Water Pollution Control Permit
11 Fund (referred to in this subparagraph as
12 the ‘Fund’).

13 “(ii) SOURCE AND USE.—All fees col-
14 lected by the Administrator (plus any
15 amount of interest and penalty collected by
16 the Administrator pursuant to section
17 309(g)) and any interest earned from the
18 investment of the Fund shall be deposited
19 in the Fund, and shall be available, with-
20 out fiscal limitation, to carry out the ac-
21 tivities for which the fees are collected (as
22 described in paragraph (1)(B)).

23 “(iii) INVESTMENT OF FUND.—It
24 shall be the duty of the Secretary of the
25 Treasury to invest such portion of the

1 Fund as the Secretary determines is not
2 required to meet the then current with-
3 draws of the Fund. The investment may
4 be made only in interest-bearing obliga-
5 tions of the United States or in obligations
6 guaranteed as to both principal and inter-
7 est by the United States. For the purpose
8 referred to in the preceding sentence, the
9 obligations may be acquired—

10 “(I) on original issue at the issue
11 price; or

12 “(II) by purchase of outstanding
13 obligations at the market price.

14 “(iv) PAYMENTS FROM FUND.—The
15 Secretary of the Treasury is authorized
16 and directed to pay out of any funds avail-
17 able in the Fund any expenses incurred by
18 the Federal Government in carrying out
19 the activities specified in clause (ii). None
20 of the funds deposited into the Fund shall
21 be available for any purpose other than
22 making payments authorized under the
23 preceding sentence.”.

1 (b) PENALTIES.—Section 309(g) (33 U.S.C.
 2 1319(g)) is amended by adding at the end the following
 3 new paragraph:

4 “(12) OTHER PENALTIES.—Any point source
 5 that fails to pay a fee lawfully imposed by the Ad-
 6 ministrator under section 402(s) shall be liable to
 7 the United States for payment of an amount equal
 8 to the sum of—

9 “(A) the amount of the fee;

10 “(B) a penalty in an amount equal to 50
 11 percent of the amount of the fee; and

12 “(C) interest on the amount of the fee
 13 computed in accordance with section 6621(a)(2)
 14 of the Internal Revenue Code of 1986.”.

15 **SEC. 502. PERMIT PROGRAM MODIFICATIONS.**

16 (a) PERMIT MANAGEMENT.—

17 (1) IN GENERAL.—Section 402(b) (33 U.S.C.
 18 1342(b)) is amended by adding at the end the fol-
 19 lowing new paragraphs:

20 “(10) To ensure that, beginning on the date that is
 21 1 year after the date of enactment of this paragraph, in
 22 the case of a new discharge into navigable waters resulting
 23 from the construction of a new facility, the applicant ap-
 24 plies for a permit under this section prior to the com-
 25 mencement of construction of the facility.

1 “(11) To ensure that each person issued a permit
2 under this section who has received assistance under sec-
3 tion 201(g)(1) or section 603(c)(1) is in compliance with
4 the requirements of section 204(b).”.

5 (2) SYSTEM OF CHARGES.—The first sentence
6 of section 204(b)(1) (33 U.S.C. 1284(b)(1)) is
7 amended by striking “the Administrator shall not
8 approve any grant for any treatment works under
9 section 201(g)(1) after March 1, 1973, unless he
10 shall first have determined that the applicant (A)
11 has adopted or will adopt” and inserting “the Ad-
12 ministrator may not approve a grant for any recipi-
13 ent of assistance under section 201(g)(1) or
14 603(c)(1)(A) unless the applicant (A) has adopted or
15 will adopt”.

16 (b) PERMIT REVISION AND RENEWAL.—Section
17 402(b)(1)(C) (33 U.S.C. 1342(b)(1)(C)) is amended—

18 (1) in clause (iii), by adding “and” at the end;
19 and

20 (2) by adding at the end the following new
21 clause:

22 “(iv) the promulgation, after the date of is-
23 suance of the permit, of any new or revised ef-
24 fluent guideline or standard pursuant to section
25 303, or any applicable regulation;”.

1 (c) FEDERAL PROGRAM OVERSIGHT.—Section
2 402(d) (33 U.S.C. 1342(d)) is amended—

3 (1) in paragraph (4)—

4 (A) by striking “on request of the State,”
5 and all that follows through “If” and inserting
6 “and if”;

7 (B) by striking “within 30 days” and all
8 that follows through “of such objection” and in-
9 serting “within 180 days after such objection”;
10 and

11 (C) by adding at the end the following new
12 sentence: “In any case in which the Adminis-
13 trator exercises waiver authority, the Adminis-
14 trator shall make reasonable efforts to periodi-
15 cally review the waiver.”; and

16 (2) by adding at the end the following new
17 paragraphs:

18 “(5) In any case in which the appropriate official of
19 a State permit program approved by the Administrator
20 pursuant to subsection (b) fails, during the 180-day period
21 beginning on the date of expiration of a permit for a dis-
22 charge, to propose to reissue a permit for the discharge,
23 the Administrator may issue a permit for the discharge.

24 “(6) The Administrator may, by regulation require
25 that each permit issued be reviewed and revised to include

1 an effluent limitation based on a new or revised effluent
2 guideline or standard, or any other applicable regulation.”.

3 (d) JUDICIAL REVIEW.—

4 (1) IN GENERAL.—Section 402(b)(3) (33
5 U.S.C. 1342(b)(3)) is amended by striking the semi-
6 colon at the end and inserting “and an opportunity
7 for judicial review of a final permit action under this
8 section in a State court by the applicant, any person
9 who participated in the public comment process, and
10 any other person who could obtain judicial review of
11 the action under any applicable law;”.

12 (2) SANCTION.—Section 402(d), as amended by
13 subsection (c)(2), is further amended by adding at
14 the end the following new paragraph:

15 “(7) If a State with a program approved under sub-
16 section (b) fails to modify a State program pursuant to
17 the requirements of subsection (b)(3) by the date that is
18 3 years after the date of enactment of this paragraph, the
19 Administrator shall withhold an amount equal to 10 per-
20 cent of the amount that would otherwise be allotted to the
21 State under section 106 for the fiscal year that begins
22 after the decision of the Administrator to withhold the
23 amount.”.

24 (e) BIOLOGICAL ASSESSMENT.—

1 (1) IN GENERAL.—Subsection (e) of section
2 402 (33 U.S.C. 1342(e)) is amended to read as fol-
3 lows:

4 “(e)(1)(A) The Administrator may, in cooperation
5 with the Governor of a State and in cooperation with the
6 heads of the United States Fish and Wildlife Service of
7 the Department of the Interior and the National Marine
8 Fisheries Service of the Department of Commerce, iden-
9 tify sensitive aquatic systems in the State that support
10 valuable biological resources, including threatened or en-
11 dangered species.

12 “(B) The Administrator shall publish a description
13 of the areas identified pursuant to subparagraph (A) in
14 the Federal Register.

15 “(2) Beginning on the date that is 1 year after the
16 date of enactment of this paragraph, before a final permit
17 under this section may be issued for a discharge to waters
18 identified pursuant to paragraph (1), the head of—

19 “(A) the United States Fish and Wildlife Serv-
20 ice of the Department of the Interior; or

21 “(B) the National Marine Fisheries Service of
22 the Department of Commerce,

23 whichever is appropriate, shall be required to review and
24 comment on a draft permit prepared pursuant to this sub-
25 section not later than 30 days after receipt of the draft

1 permit. The Administrator shall promulgate such regula-
2 tions as are necessary to carry out this paragraph.”.

3 (2) BIOLOGICAL DISCHARGE CRITERIA.—Sec-
4 tion 403 (33 U.S.C. 1343) is amended—

5 (A) by striking the section heading and in-
6 serting the following new heading:

7 “BIOLOGICAL DISCHARGE CRITERIA”;

8 (B) by striking subsection (a) and insert-
9 ing the following new subsection:

10 “(a) No permit shall be issued under section 402 for
11 a discharge into the territorial sea, the waters of the con-
12 tiguous zone, the oceans, or any waters identified pursu-
13 ant to section 402(e)(1)(A) if, on the basis of an assess-
14 ment of the criteria referred to in subsection (c), the dis-
15 charge can reasonably be expected to prevent the protec-
16 tion and propagation of a balanced population of shellfish,
17 fish, and wildlife.”; and

18 (C) in subsection (c)(1)—

19 (i) in the matter preceding subpara-
20 graph (A)—

21 (I) by striking “Act (and from
22 time to time promulgate)” and insert-
23 ing the following: “the Water Pollu-
24 tion Prevention and Control Act of
25 1993, and biennially thereafter, pub-
26 lish”; and

- 1 (II) by striking “and the
2 oceans,” and inserting the following:
3 “the oceans, or any waters identified
4 pursuant to section 402(e)(1)(A),”;
5 (ii) in subparagraph (B), by striking
6 “marine” and inserting “aquatic”; and
7 (iii) in subparagraph (G), by inserting
8 “or other waters” after “oceans”.

9 (f) **PERMIT APPLICATION REQUIREMENTS.**—Section
10 402(a) (33 U.S.C. 1342(a)) is amended by adding at the
11 end the following new paragraph:

12 “(6) Not later than 2 years after the date of
13 enactment of this paragraph, the Administrator shall
14 promulgate regulations to update the application for
15 a permit under this section for municipal and indus-
16 trial dischargers to require the applicant to more
17 fully characterize the nature of the discharge of ef-
18 fluent and the contributions of the effluent to receiv-
19 ing waters.”.

20 (g) **WATERBODY AND EFFLUENT ASSESSMENT.**—

21 (1) **BIOLOGICAL MONITORING METHODS.**—Sec-
22 tion 304(a)(8) (33 U.S.C. 1314(a)(8)) is amended
23 by adding at the end the following new sentence:
24 “Not later than 3 years after the date of enactment
25 of the Water Pollution Prevention and Control Act

1 of 1993, the Administrator shall publish regulations
2 that establish biological monitoring methods, prac-
3 tices, and protocols, including measurements suitable
4 for establishing the biological condition of
5 waterbodies.”.

6 (2) WHOLE EFFLUENT TOXICITY.—Section
7 402(a)(2) (33 U.S.C. 1342(a)(2)) is amended—

8 (A) by inserting “(A)” before “The Admin-
9 istrator”; and

10 (B) by adding at the end the following new
11 subparagraph:

12 “(B) Not later than 2 years after the date of enact-
13 ment of this subparagraph, the Administrator shall pub-
14 lish regulations that provide for—

15 “(i) the establishment of a quantitative basis
16 for determining acute and chronic whole effluent
17 toxicity; and

18 “(ii) the inclusion of numerical effluent limita-
19 tions for whole effluent toxicity in a permit for any
20 discharge that the Administrator determines is likely
21 to exhibit toxicity.”.

22 (h) INNOVATIVE PRODUCTION PROCESSES AND
23 TECHNOLOGY.—Subsection (k) of section 301 (33 U.S.C.
24 1311(k)) is amended to read as follows:

1 “(k) INNOVATIVE PRODUCTION PROCESSES AND
2 TECHNOLOGY.—

3 “(1) IN GENERAL.—The Administrator (or the
4 State, in the case of a State with the authority to
5 issue permits under section 402) may, with the con-
6 sent of the State in which a source is located and
7 after notice and opportunity for comment, tempo-
8 rarily waive any permit limitation applicable to a
9 point source that is in a permit issued under section
10 402 and that has been established pursuant to sub-
11 paragraph (A) or (E) of subsection (b)(2) for the
12 purpose of encouraging the development and testing
13 of an innovative production process or pollution con-
14 trol technology that will—

15 “(A) result in an effluent reduction signifi-
16 cantly greater than that required by the limita-
17 tion otherwise applicable;

18 “(B) promote the national goal of eliminat-
19 ing the discharge of all pollutants; or

20 “(C) result in significantly lower costs than
21 processes and technologies that the Adminis-
22 trator has determined to be the best economi-
23 cally achievable for the source.

1 “(2) WAIVER.—A waiver referred to in para-
2 graph (1) shall include alternative limitations appli-
3 cable during the temporary waiver period that—

4 “(A) ensure that water quality standards
5 applicable to the waters receiving any discharge
6 from the source are not exceeded; and

7 “(B) provide for the protection of human
8 health and the environment.

9 “(3) REQUIREMENTS FOR WAIVER.—The Ad-
10 ministrator may only grant a waiver under this sub-
11 section if the Administrator finds that—

12 “(A) the innovative process or technology
13 that is the subject of the waiver has not been
14 adequately demonstrated;

15 “(B) the innovative process or technology
16 has not previously failed to operate effectively
17 or to meet any limitation otherwise applicable;
18 and

19 “(C) the owner of the source will conduct
20 such tests and monitoring during the period of
21 the waiver as are necessary to ensure that the
22 alternative limitations established pursuant to
23 paragraph (2) are not exceeded.

24 “(4) PERIOD OF WAIVER.—

1 “(A) IN GENERAL.—The period of the
2 waiver shall not exceed the period necessary to
3 determine whether the innovative process or
4 technology would, in commercial operation,
5 meet the limitations referred to in paragraph
6 (1) that would otherwise apply to the source
7 that is the subject of the waiver. The period
8 may not exceed 90 days, unless the Adminis-
9 trator extends the period for an additional 90-
10 day period.

11 “(B) TERMINATION.—The Administrator
12 or the State in which the source is located may
13 at any time terminate the waiver granted under
14 this subsection, if the Administrator or the
15 State determines that the innovative process or
16 technology—

17 “(i) has failed to achieve an effluent
18 reduction at least equivalent to the reduc-
19 tion required by a limitation referred to in
20 paragraph (1) that would otherwise apply;
21 or

22 “(ii) has exceeded any limitation in
23 the waiver established pursuant to para-
24 graph (2).

1 “(5) NUMBER OF WAIVERS.—The number of
 2 waivers granted under this subsection for a specific
 3 production process or pollution control technology
 4 may not exceed the number necessary to dem-
 5 onstrate the effectiveness of the process or tech-
 6 nology in meeting the objectives specified in para-
 7 graph (1). No waiver granted under this section
 8 shall apply to any limitation in a permit that is not
 9 directly related to the operation and testing of the
 10 innovative process or technology.”.

11 **SEC. 503. ENFORCEMENT.**

12 (a) CITIZEN ENFORCEMENT.—Section 505 (33
 13 U.S.C. 1365) is amended—

14 (1) in subsection (a)(1), by inserting “to have
 15 violated (if there is evidence that the alleged viola-
 16 tion has been repeated) or” before “to be in viola-
 17 tion”;

18 (2) in subsection (b)(1)(A), by inserting “or has
 19 occurred,” after “occurs,”;

20 (3) in subsection (f)(6), by inserting “, or has
 21 been in effect,” after “in effect”; and

22 (4) in subsection (g), by striking “is” and in-
 23 serting “has been, is,”.

24 (b) PENALTIES AND COMPENSATION.—

25 (1) BENEFICIAL USE.—

1 (A) CIVIL PENALTIES.—Section 309(d)
2 (33 U.S.C. 1319(d)) is amended—

3 (i) by striking “(d) Any person” and
4 inserting the following:

5 “(d) CIVIL PENALTIES.—

6 “(1) IN GENERAL.—Any person”; and

7 (ii) by adding at the end the following
8 new paragraph:

9 “(2) BENEFICIAL USE.—Notwithstanding any
10 other provision of law (including subchapter III of
11 chapter 7 of title 31, United States Code, and chap-
12 ter 128 of title 28, United States Code), each dis-
13 trict court may order that all or a portion of a civil
14 penalty referred to in paragraph (1) be used for a
15 beneficial project to enhance public health or the en-
16 vironment by restoring or otherwise improving, in a
17 manner consistent with this Act, the water quality,
18 wildlife, or habitat of the waterbody in which the
19 violation occurred.”.

20 (B) CITIZENS SUITS.—Section 505(a) (33
21 U.S.C. 1365(a)) is amended by adding at the
22 end the following new sentences: “Notwith-
23 standing any other provision of law (including
24 subchapter III of chapter 7 of title 31, United
25 States Code, and chapter 123 of title 28, Unit-

1 ed States Code), each district court may order
2 that, in any action under this subsection to
3 apply a civil penalty, all or a portion of the civil
4 penalty be used for a beneficial project to en-
5 hance public health or the environment by re-
6 storing or otherwise improving, in a manner
7 consistent with this Act, the water quality, wild-
8 life, or habitat of the waterbody in which the
9 violation occurred.”.

10 (C) CRIMINAL FINES.—Section 309(c) (33
11 U.S.C. 1319(c)) is amended by adding at the
12 end the following new paragraph:

13 “(8) BENEFICIAL USE.—Notwithstanding any
14 other provision of law (including subchapter III of
15 chapter 7 of title 31, United States Code, and chap-
16 ter 123 of title 28, United States Code) each court
17 that imposes a fine pursuant to this subsection may
18 order that all or a portion of the fine be used for
19 a beneficial project to enhance public health or the
20 environment by restoring or otherwise improving, in
21 a manner consistent with this Act, the water quality,
22 wildlife, or the habitat of the waterbody in which the
23 violation occurred.”.

24 (2) RESTORATION OF DAMAGED NATURAL RE-
25 SOURCES.—

1 (A) IN GENERAL.—Section 309(b) (33
2 U.S.C. 1319(b)) is amended—

3 (i) in the second sentence, by insert-
4 ing, “, to order the defendant to take such
5 other action as may be necessary, including
6 the restoration of natural resources dam-
7 aged or destroyed as a result of the viola-
8 tion,” after “such violation”; and

9 (ii) by inserting after the second sen-
10 tence the following new sentence: “The
11 maximum cost of any restoration under the
12 preceding sentence that a responsible per-
13 son may be obligated to pay to carry out
14 the order may not exceed the maximum
15 amount of a civil penalty that may be as-
16 sessed against the responsible person in a
17 civil action commenced pursuant to this
18 subsection.”.

19 (B) CITIZENS SUITS.—Section 505(a) (33
20 U.S.C. 1365(a)), as amended by paragraph
21 (1)(B), is further amended—

22 (i) in the second sentence, by insert-
23 ing “or to order any responsible person to
24 take such other action as may be nec-
25 essary, including the restoration of natural

1 resources damaged or destroyed as a result
2 of the violation," after "as the case may
3 be,"; and

4 (ii) by inserting after the second sen-
5 tence the following new sentence: "The
6 maximum cost of any restoration under the
7 preceding sentence that a responsible per-
8 son may be obligated to pay to carry out
9 the order may not exceed the maximum
10 amount of a civil penalty that may be as-
11 sessed against the responsible person in a
12 civil action commenced pursuant to this
13 subsection."

14 (3) PRETREATMENT REQUIREMENTS.—

15 (A) IN GENERAL.—Section 505(f)(4) (33
16 U.S.C. 1365(f)(4)) is amended by inserting "
17 pretreatment requirement," after "effluent
18 standard".

19 (B) STATE ENFORCEMENT.—Section
20 309(a)(1) (33 U.S.C. 1319(a)(1)) is amended
21 by inserting "any requirement imposed under a
22 pretreatment program approved under sub-
23 section (a)(3) or (b)(8) of section 402, or any
24 local limit imposed under section 402(b)(9),"
25 after "under section 402 or 404 of this Act,".

1 (C) ENFORCEMENT BY THE ADMINIS-
2 TRATOR.—Section 309(a)(3) (33 U.S.C.
3 1319(a)(3)) is amended by inserting “or any re-
4 quirement imposed under a pretreatment pro-
5 gram approved under subsection (a)(3) or
6 (b)(8) of section 402 or any local limit imposed
7 under section 402(b)(9),” after “section 404 of
8 this Act by a State,”.

9 (D) ADMINISTRATIVE PENALTIES.—Sec-
10 tion 309(g)(1)(A) (33 U.S.C. 1319(g)(1)(A)) is
11 amended by inserting “or any requirement im-
12 posed under a pretreatment program approved
13 under subsection (a)(3) or (b)(8) of section 402
14 or any local limit imposed under section
15 402(b)(9),” after “section 404 by a State,”.

16 (E) NOTICE TO PUBLICLY OWNED TREAT-
17 MENT WORKS OF NOTIFICATION.—The first
18 sentence of section 309(a)(4) (33 U.S.C.
19 1319(a)(4)) is amended by striking “and other
20 affected States” and inserting “, other affected
21 States, and any publicly owned treatment works
22 receiving wastewater from the violation”.

23 (4) FIELD CITATION PROGRAM.—Section
24 309(g), as amended by section 501(b), (33 U.S.C.
25 1319(g)) is further amended—

1 (A) by redesignating paragraphs (7)
2 through (12) as paragraphs (8) through (13),
3 respectively; and

4 (B) by inserting after paragraph (6) the
5 following new paragraph:

6 “(7) FIELD CITATION PROGRAM.—

7 “(A) AUTHORITY TO IMPLEMENT PRO-
8 GRAM.—The Administrator may establish, by
9 regulation, a field citation program under which
10 field citations for minor violations may be is-
11 sued by officers or employees designated by the
12 Administrator. The field citations issued pursu-
13 ant to this authority shall not be subject to the
14 public notice requirements of paragraph (4), or
15 any other requirement for advance public notifi-
16 cation.

17 “(B) AMOUNT OF PENALTY.—A civil pen-
18 alty assessed under this paragraph may not ex-
19 ceed \$5,000 per day for each violation, and a
20 total of \$25,000 for the violation.

21 “(C) ELECTION.—Any person to whom a
22 field citation is assessed may, within a reason-
23 able time as prescribed by the Administrator
24 through regulation, elect to pay the penalty as-
25 sessment or to request a hearing on the field ci-

1 tation. If a request for a hearing is not made
2 within the time specified in the regulation, the
3 penalty assessment in the field citation shall be
4 final.

5 “(D) HEARING.—A hearing under this
6 paragraph may not be subject to section 554 or
7 556 of title 5, but shall provide a reasonable op-
8 portunity to be heard and to present evidence.

9 “(E) EFFECT ON FUTURE ENFORCE-
10 MENT.—Payment of a civil penalty required by
11 a field citation may not be a defense to further
12 enforcement by the United States or a State.”.

13 (5) OFFSETTING PENALTIES.—

14 (A) CIVIL PENALTIES.—The second sen-
15 tence of paragraph (1) of section 309(d) (33
16 U.S.C. 1319(d)), as designated by paragraph
17 (1)(A)(i), is amended by inserting “any penalty
18 previously imposed by a court or administrative
19 agency for the same violation,” after “the viola-
20 tor,”.

21 (B) EXEMPTION FROM CERTAIN LIMITA-
22 TIONS.—Section 309(g)(6)(B) (33 U.S.C.
23 1319(g)(6)(B)) is amended—

24 (i) in clause (i), by inserting “or an
25 action under a State law comparable to

1 this subsection” after “an action under
2 this subsection”; and

3 (ii) in clause (ii), by inserting “or an
4 action under a State law comparable to
5 this subsection,” after “an action under
6 this subsection”.

7 (6) **ECONOMIC BENEFIT.**—Section 309(g) (33
8 U.S.C. 1319(g)), as amended by section 501(b) and
9 paragraph (4)(A), is further amended—

10 (A) by redesignating paragraph (13) as
11 paragraph (14); and

12 (B) by inserting after paragraph (12) the
13 following new paragraph:

14 “(13) **STATE CONSIDERATION OF ECONOMIC**
15 **BENEFIT.**—

16 “(A) **ESTABLISHMENT AND APPLICATION**
17 **OF POLICY.**—Each State that has in effect a
18 State law that has any comparable civil enforce-
19 ment authority (whether administrative or judi-
20 cial) to those authorities under this section
21 shall develop and apply an economic benefit pol-
22 icy to be used in determining the amount of any
23 penalty assessed against a violator. The policy
24 shall ensure consideration of the amount of eco-

1 nomic benefit resulting from the violation that
2 is the subject of the penalty.

3 “(B) AUTHORITY OF ADMINISTRATOR.—In
4 addition to other circumstances giving rise to
5 enforcement proceedings under this Act, the
6 Administrator may commence enforcement pro-
7 ceedings under this section against a violator
8 that is the subject of an action under State law
9 that has comparable requirements to this sub-
10 section if the State does not establish and apply
11 an economic benefit policy to be used in deter-
12 mining the amount of any penalty assessed
13 against a violator under the comparable provi-
14 sion of State law.”.

15 (7) STATE ADMINISTRATIVE ENFORCEMENT.—

16 (A) IN GENERAL.—Section 402 (33 U.S.C.
17 1342), as amended by section 501(a), is further
18 amended by adding at the end the following
19 new subsection:

20 “(t) WITHHOLDING WATER POLLUTION CONTROL
21 ASSISTANCE.—

22 “(1) IN GENERAL.—Beginning on the date that
23 is 3 years after the date of enactment of this sub-
24 section, the Administrator is authorized to withhold
25 from a State with an approved program under sub-

1 section (b), an amount not to exceed 25 percent of
2 the amount of funds allocated for any fiscal year to
3 the State under section 106, if the Administrator de-
4 termines that the State does not have adequate au-
5 thority to abate violations of—

6 “(A) permits issued under section 402; and

7 “(B) pretreatment requirements applicable
8 to industrial users of publicly owned treatment
9 works.

10 “(2) ADEQUATE AUTHORITY.—For purposes of
11 paragraph (1), in order to demonstrate adequate au-
12 thority, a State shall, at a minimum, demonstrate
13 the authority to recover an administrative civil pen-
14 alty in a maximum amount of not less than \$10,000
15 per day for each violation referred to in paragraph
16 (1).

17 “(3) AMOUNTS WITHHELD.—The Administrator
18 shall make available any amounts withheld under
19 paragraph (1) to States with an approved program
20 under subsection (b).”.

21 (B) ABATEMENT.—Section 402(b) (33
22 U.S.C. 1342(b)) is amended by striking para-
23 graph (7) and inserting the following new para-
24 graph:

1 “(7) To abate violations of the permit or the permit
2 program by—

3 “(A) the imposition of administrative penalties
4 (in a manner comparable to section 309(g));

5 “(B) the imposition of criminal penalties; or

6 “(C) other means of enforcement that the State
7 is able to demonstrate to be as effective as the
8 means described in this paragraph.”.

9 (8) FEDERAL PROCUREMENT.—Subsection (a)
10 of section 508 (33 U.S.C. 1368(a)) is amended to
11 read as follows:

12 “(a)(1)(A) No Federal agency may enter into any
13 contract, grant, or loan that is to be performed, in whole
14 or in part, using any facility owned, leased, operated, or
15 supervised, at the time of the violation, by any person who
16 has been convicted of an offense under section 309(c),
17 407, or 411 or under section 10 of the Act entitled ‘An
18 Act making appropriations for the construction, repair,
19 and preservation of certain public works on rivers and har-
20 bors, and for other purposes’, approved March 3, 1899
21 (33 U.S.C. 403) (commonly known as the ‘River and Har-
22 bor Act of 1899’).

23 “(B) With respect to a person described in subpara-
24 graph (A), a prohibition under such subparagraph shall—

1 “(i) continue for a period of not less than 1
2 year following the date of conviction as determined
3 by the Administrator;

4 “(ii) affect each facility owned or operated by
5 the person that the Administrator determines has
6 given rise to the conviction; and

7 “(iii) continue until the Administrator, in the
8 sole discretion of the Administrator, certifies that
9 the conditions giving rise to the conviction have been
10 corrected.

11 “(C) Each applicant who seeks to participate in a
12 Federal contract, grant, or loan shall disclose any convic-
13 tion described in subparagraph (A) to each appropriate
14 Federal agency.

15 “(2)(A) No Federal agency may enter into any con-
16 tract for the procurement of a good, material, or service
17 with any person who has been found liable for civil pen-
18 alties, or who has entered into any consent order or decree
19 under section 309(d) admitting to violations that may be
20 subject to the assessment of a civil penalty under section
21 309(d), as a result of 3 or more separate enforcement ac-
22 tions instituted under section 309(d) within a period of
23 less than 5 consecutive years, if the Administrator deter-
24 mines that the contract is to be performed at a facility—

1 “(i) at which the violations that resulted in the
2 determination of liability or admission of liability in
3 any enforcement action under section 309(d) oc-
4 curred; and

5 “(ii) that is owned, leased, or supervised by the
6 person who was found to be responsible or admitted
7 liability for any violation that was the subject of an
8 enforcement action under section 309(d).

9 “(B) With respect to a person described in subpara-
10 graph (A), a prohibition under such subparagraph shall—

11 “(i) continue for a period of not less than 1
12 year from the date determined by the Administrator
13 to be the final and effective date of the third en-
14 forcement action occurring within the 5-year period
15 referred to in subparagraph (A);

16 “(ii) affect each facility that the Administrator
17 determines has given rise to the enforcement actions
18 under section 309(d); and

19 “(iii) continue until the Administrator, in the
20 sole discretion of the Administrator, certifies that
21 the conditions giving rise to the violations for which
22 liability under section 309(d) has been imposed or
23 admitted in the enforcement actions under subpara-
24 graph (A) have been corrected.”.

1 (9) ADMINISTRATIVE PENALTIES.—Section
2 309(g)(2)(B) (33 U.S.C. 1319(g)(2)(B)) is amended
3 by striking “\$125,000” and inserting “\$200,000”.

4 (c) FEDERAL FACILITIES.—

5 (1) IN GENERAL.—Section 313(a) (33 U.S.C.
6 1323(a)) is amended—

7 (A) in the first sentence—

8 (i) by striking “(1)” and inserting
9 “(A)”; and

10 (ii) by striking “(2)” and inserting
11 “(B)”;

12 (B) by designating the first and second
13 sentences as paragraphs (1) and (2), respec-
14 tively;

15 (C) by striking the third sentence;

16 (D) by designating the fourth sentence as
17 paragraph (7);

18 (E) by striking the fifth sentence;

19 (F) by designating the sixth through elev-
20 enth sentences as paragraph (8);

21 (G) by inserting after paragraph (2) (as
22 designated by subparagraph (B)) the following
23 new paragraphs:

24 “(3) The Federal, State, interstate, and local sub-
25 stantive and procedural requirements, administrative au-

1 thory, and process and sanctions referred to in this sec-
2 tion shall include—

3 “(A) any administrative order; and

4 “(B) any civil or administrative penalty or fine
5 (without regard to whether the penalty or fine is pu-
6 nitive or coercive in nature or is imposed for one or
7 more isolated, intermittent, or continuing violations).

8 “(4) The United States hereby expressly waives any
9 immunity otherwise applicable to the United States with
10 respect to the substantive and procedural requirements,
11 administrative authority, and process and sanctions re-
12 ferred to in paragraph (2) (including any injunctive relief,
13 administrative order, civil or administrative penalty re-
14 ferred to in paragraph (3)(B), or reasonable service
15 charge).

16 “(5) A reasonable service charge referred to in para-
17 graph (4) includes any fee or charge assessed in connec-
18 tion with—

19 “(A) the processing and issuance of a permit;

20 “(B) the renewal of a permit;

21 “(C) an amendment to a permit;

22 “(D) the review of a plan, study, or other docu-
23 ment;

24 “(E) the inspection and monitoring of a facility:

25 and

1 “(F) any other nondiscriminatory charge,
2 that is assessed in connection with a Federal, State, inter-
3 state, or local water pollution program.

4 “(6)(A) No agent, employee, or officer of the United
5 States shall be personally liable for any civil penalty under
6 any Federal, State, interstate, or local water pollution law
7 with respect to any act or omission within the official du-
8 ties of the agent, employee, or officer.

9 “(B) An agent, employee, or officer of the United
10 States shall be subject to a criminal sanction (including
11 a fine or imprisonment) under a Federal or State water
12 pollution law, except that no department, agency, or in-
13 strumentality of the executive, legislative, or judicial
14 branch of the Federal Government shall be subject to a
15 criminal sanction referred to in this subparagraph.”; and

16 (H) in paragraph (7) (as designated by
17 subparagraph (D)), by striking “28 U.S.C.
18 1441 et seq.” and inserting “chapter 89 of title
19 28, United States Code”.

20 (2) DEFINITION OF PERSON.—Section 502(5)
21 (33 U.S.C. 1362(5)) is amended by striking “or any
22 interstate body” and inserting “any interstate body,
23 or any department, agency, or instrumentality of the
24 United States”.

1 (3) CIVIL PENALTY.—Section 311(a)(7) (33
2 U.S.C. 1321(a)(7)) is amended by striking “and a
3 partnership” and inserting “partnership, or any de-
4 partment, agency or instrumentality of the United
5 States”.

6 (4) COMPLIANCE ORDERS.—Section 309 (33
7 U.S.C. 1319) is amended by adding at the end the
8 following new subsection:

9 “(h) COMPLIANCE ORDERS FOR FEDERAL FACILITY
10 ENFORCEMENT.—

11 “(1) IN GENERAL.—

12 “(A) AUTHORIZATION.—If on the basis of
13 any information available—

14 “(i) to the Administrator, the Admin-
15 istrator determines that any department,
16 agency, or instrumentality of the United
17 States has violated or is in violation of sec-
18 tion 301, 302, 306, 307, 308, 311, 318, or
19 405, or has violated or is in violation of
20 any permit condition or limitation imple-
21 menting any of such sections in a permit
22 issued under section 402 by the Adminis-
23 trator or by a State, or in a permit issued
24 under section 404 by a State, or any re-
25 quirement imposed under a pretreatment

1 program approved under subsection (a)(3)
2 or (b)(8) of section 402;

3 “(ii) to the Secretary of the Army, the
4 Secretary of the Army determines that any
5 department, agency, or instrumentality of
6 the United States has violated or is in vio-
7 lation of any condition or limitation in a
8 permit issued under section 404; or

9 “(iii) to the Secretary of the Depart-
10 ment in which the Coast Guard is operat-
11 ing, the Secretary determines that any de-
12 partment, agency, or instrumentality of the
13 United States has violated section 311 or
14 any regulation implementing such section,
15 the Administrator or Secretary, as applicable,
16 may issue an order to assess a civil or adminis-
17 trative penalty for any past or current violation,
18 requiring compliance immediately or within a
19 specified time period, or both.

20 “(B) CONTENTS OF ORDER.—

21 “(i) IN GENERAL.—Any order issued
22 pursuant to this subsection—

23 “(I) by the Administrator, may
24 include a suspension or revocation of
25 any permit issued by the Adminis-

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1 trator or a State under section 402 or
2 404;

3 “(II) by the Secretary of the
4 Army, may include a suspension or
5 revocation of any permit issued by the
6 Secretary of the Army or a State
7 under section 404; and

8 “(III) shall state with reasonable
9 specificity the nature of the violation.

10 “(ii) MAXIMUM PENALTY AMOUNT.—
11 Any penalty assessed in an order issued
12 pursuant to this subsection may not exceed
13 \$25,000 per day for each violation.

14 “(2) PUBLIC HEARING.—

15 “(A) IN GENERAL.—Any order issued pur-
16 suant to this subsection shall become final un-
17 less, not later than 30 days after the order is
18 served, the Federal department, agency, or in-
19 strumentality of the United States named in
20 the order requests a public hearing. If the re-
21 quest is made, the Administrator or Secretary,
22 as applicable, shall promptly conduct a public
23 hearing.

24 “(B) SUBPOENAS AND DISCOVERY.—In
25 connection with any proceeding under this sub-

1 section, the Administrator or the Secretary
2 may—

3 “(i) issue a subpoena for the attend-
4 ance and testimony of a witness or the
5 production of a relevant paper, book, or
6 document; and

7 “(ii) promulgate rules for discovery
8 procedures.

9 “(3) VIOLATION OF ORDERS.—If a violator fails
10 to take corrective action within the period specified
11 in an order issued under this subsection—

12 “(A) the Administrator or Secretary, as
13 applicable, may assess a civil penalty of not
14 more than \$25,000 for each day of continued
15 noncompliance with the order; and

16 “(B)(i) the Administrator may suspend or
17 revoke the permit issued pursuant to section
18 402 or 404 that is the subject of the order,
19 without regard to whether the permit is issued
20 by the Administrator or a State; and

21 “(ii) the Secretary of the Army may sus-
22 pend or revoke the permit issued pursuant to
23 section 404, without regard to whether the per-
24 mit is issued by the Secretary of the Army or
25 a State.

1 “(4) DETERMINING AMOUNT OF PENALTY.—In
2 determining the amount of any penalty assessed
3 under this subsection, the Administrator or Sec-
4 retary, as applicable, shall consider—

5 “(A) the seriousness of each violation;

6 “(B) the economic benefit or savings (if
7 any) to the violator resulting from each viola-
8 tion;

9 “(C) any history of the violations;

10 “(D) any good-faith efforts to avoid non-
11 compliance or to comply with applicable require-
12 ments;

13 “(E) failure, prior to the violation, to es-
14 tablish and implement a program or other orga-
15 nized effort to achieve and maintain compliance
16 with environmental laws (including regulations);
17 and

18 “(F) such other matters in mitigation and
19 aggravation as justice may require.”.

20 (d) EMERGENCY POWERS.—Section 504 (33 U.S.C.
21 1364) is amended—

22 (1) in subsection (a)—

23 (A) by inserting after “(a)” the following
24 new subsection heading: “IN GENERAL.—”;

1 (B) by striking “is presenting” and insert-
2 ing “may present”;

3 (C) by inserting “, whether actual or
4 threatened,” after “substantial endangerment”;
5 and

6 (D) by striking “may bring suit” and in-
7 serting the following: “or to the environment,
8 the Administrator may—

9 “(1) issue such orders, or take such action, as
10 may be necessary to protect public health or welfare
11 or the environment; and

12 “(2) bring suit on behalf of the United States
13 in a district court of the United States of appro-
14 priate jurisdiction against any person who causes or
15 contributes to the alleged pollution or threat of pol-
16 lution to—

17 “(A) immediately restrain the person from
18 discharging or threatening to discharge each
19 pollutant causing or contributing to the pollu-
20 tion;

21 “(B) order the person to take such other
22 action as may be necessary; or

23 “(C) take action under both subparagraphs
24 (A) and (B).”; and

1 (2) by adding at the end the following new sub-
2 section:

3 “(b) ADDITIONAL ACTION.—The Administrator may
4 take additional action under this section, including issuing
5 such orders as may be necessary to protect public health
6 or welfare or the environment.”.

7 (e) ADMINISTRATIVE AMENDMENTS.—

8 (1) REQUIREMENT FOR CONSULTATION ON AD-
9 MINISTRATIVE ORDERS.—Section 309(g) (33 U.S.C.
10 1319(g)), as amended by section 501(b) and sub-
11 sections (b)(4)(A) and (b)(6)(A), is further
12 amended—

13 (A) by redesignating paragraph (14) as
14 paragraph (15); and

15 (B) by inserting after paragraph (13) the
16 following new paragraph:

17 “(14) CONSULTATION.—The failure of the Ad-
18 ministrator to consult with a State concerning a vio-
19 lation of an order pursuant to paragraph (1) may
20 not constitute a defense in any action to assess a
21 civil penalty under this subsection and may not in-
22 validate the assessment of any penalty under this
23 subsection.”.

1 (2) EFFECT OF STATE ENFORCEMENT AC-
2 TIONS.—Section 309(g)(6)(A) (33 U.S.C.
3 1319(g)(6)(A)) is amended—

4 (A) in clause (i), by adding “or” at the
5 end;

6 (B) by striking clause (ii);

7 (C) by redesignating clause (iii) as clause
8 (ii); and

9 (D) in clause (ii) (as so redesignated)—

10 (i) by striking “, the Secretary, or the
11 State” and inserting “or the Secretary”;
12 and

13 (ii) by striking “or such comparable
14 State law, as the case may be,”.

15 (3) SINGLE OPERATIONAL UPSETS.—

16 (A) CRIMINAL PENALTIES.—Section
17 309(c) (33 U.S.C. 1319(c)), as amended by
18 subsection (b)(1)(C), is further amended—

19 (i) by striking paragraph (5); and

20 (ii) by redesignating paragraphs (6),
21 (7), and (8) as paragraphs (5), (6), and
22 (7), respectively.

23 (B) CIVIL PENALTIES.—Paragraph (1) of
24 section 309(d) (33 U.S.C. 1319(d)), as des-
25 ignated by subsection (b)(1)(A)(i), is amended

1 by striking "For purposes of this subsection, a
2 single operational upset which leads to simulta-
3 neous violations of more than one pollutant pa-
4 rameter shall be treated as a single violation."

5 (C) ADMINISTRATIVE PENALTIES.—Section
6 309(g)(3) (33 U.S.C. 1319(g)(3)) is amended
7 by striking "For purposes of this subsection, a
8 single operational upset which leads to simulta-
9 neous violations of more than one pollutant pa-
10 rameter shall be treated as a single violation."

11 (4) OBTAINING INFORMATION.—

12 (A) IN GENERAL.—Subsection (a) of sec-
13 tion 308 (33 U.S.C. 1318(a)) is amended to
14 read as follows:

15 "(a) IN GENERAL.—

16 "(1) DUTIES OF THE ADMINISTRATOR.—When-
17 ever the Administrator is required to carry out the
18 objective of this Act (as described in section 101(a)),
19 including—

20 "(A) developing or assisting in the develop-
21 ment of an effluent limitation, or other limita-
22 tion, prohibition, or effluent standard,
23 pretreatment standard, or standard of perform-
24 ance under this Act;

1 “(B) determining whether any person is in
2 violation of an effluent limitation, or other limi-
3 tation, prohibition, effluent standard,
4 pretreatment standard, or standard of perform-
5 ance, or is causing or contributing to the
6 exceedance of a water quality standard, under
7 this Act;

8 “(C) a requirement established under this
9 section; or

10 “(D) carrying out sections 305, 311, 402,
11 404 (relating to State permit programs), 405,
12 and 504,

13 the Administrator may require a person subject to a
14 requirement of this Act to meet the requirements of
15 paragraph (2) relating to the provision of informa-
16 tion to the Administrator if the Administrator deter-
17 mines that the information is relevant to the imple-
18 mentation of this Act.

19 “(2) REQUIREMENTS.—In each case described
20 in paragraph (1), the Administrator may require a
21 person subject to a requirement of this Act to—

22 “(A) establish and maintain such records;

23 “(B) make such reports;

1 “(C) install, use, and maintain such mon-
2 itoring equipment or methods (including, if ap-
3 propriate, biological monitoring methods);

4 “(D) sample such effluents and affected
5 receiving waters (in accordance with such meth-
6 ods, at such locations, at such intervals, and in
7 such manner as the Administrator shall pre-
8 scribe;

9 “(E) provide data necessary to support the
10 development of water quality criteria for a pol-
11 lutant present in the discharge of the owner or
12 operator; and

13 “(F) provide such other information,
14 as the Administrator may reasonably require.

15 “(3) INSPECTION.—The Administrator or an
16 authorized representative of the Administrator (in-
17 cluding an authorized contractor acting as a rep-
18 resentative of the Administrator) on presentation of
19 the credentials of the Administrator or
20 representative—

21 “(A) shall have a right of entry to, upon,
22 or through any premises in which an effluent
23 source is located or in which any records re-
24 quired to be maintained under paragraph (2)
25 are located; and

1 “(B) may at reasonable times have access
2 to and copy any records, inspect any monitoring
3 equipment or method required under paragraph
4 (2), and sample any effluents that the owner or
5 operator of the source is required to sample
6 under such paragraph.”.

7 (B) TECHNICAL AMENDMENTS.—Section
8 308 (33 U.S.C. 1318) is amended—

9 (i) in subsection (b), by inserting
10 “RECORDS; REPORTS; INFORMATION.—”
11 after “(b)”; and

12 (ii) in subsection (c), by inserting
13 “PROCEDURES.—” after “(c)”.

14 (5) SUBPOENAS.—The first sentence of section
15 509(a)(1) (33 U.S.C. 1369(a)(1)) is amended by in-
16 serting “or any enforcement activity under this Act”
17 after “section 507(e) of this Act”.

18 (f) TECHNICAL AMENDMENT.—Section 309(g)(2)
19 (33 U.S.C. 1319(g)(2)) is amended—

20 (1) in subparagraph (A), by inserting “day for
21 each” after “exceed \$10,000 per”; and

22 (2) in the first sentence of subparagraph (B),
23 by striking “for each day during which the violation
24 continues” and inserting “for each violation”.

1 **TITLE VI—PROGRAM**
2 **MANAGEMENT**

3 **SEC. 601. TECHNOLOGY DEVELOPMENT.**

4 Section 105 (33 U.S.C. 1255) is amended to read as
5 follows:

6 **"SEC. 105. TECHNOLOGY DEVELOPMENT.**

7 “(a) **IN GENERAL.**—The Administrator shall estab-
8 lish a program to develop and demonstrate practices,
9 methods, technologies, or processes that may be effective
10 in the prevention and control of sources or potential
11 sources of water pollution.

12 “(b) **GRANT ASSISTANCE.**—

13 “(1) **IN GENERAL.**—The Administrator may
14 provide grants to public agencies and authorities and
15 nonprofit organizations and institutions, and enter
16 into cooperative agreements or contracts with other
17 persons, to develop or demonstrate water pollution
18 prevention and control practices, methods, tech-
19 nologies, or processes.

20 “(2) **REQUIREMENTS FOR DEMONSTRATION**
21 **PROJECTS.**—The Administrator may provide assist-
22 ance for a demonstration project under this sub-
23 section only if—

24 “(A) the demonstration project will serve
25 to demonstrate a new or significantly improved

1 practice, method, technology, or process, or the
2 feasibility and cost effectiveness of a practice,
3 method, technology, or process that exists at
4 the time of the demonstration, but is unproven;

5 “(B) the demonstration project will not du-
6 plicate any other Federal, State, local, or com-
7 mercial effort to demonstrate the practice,
8 method, technology, or process;

9 “(C) the demonstration project meets the
10 requirements of this section and serves the pur-
11 poses of this Act;

12 “(D) the demonstration of the practice,
13 technology, or process will comply with all other
14 laws (including regulations) for the protection
15 of human health and welfare and the environ-
16 ment; and

17 “(E)(i) in the case of a contract or cooper-
18 ative agreement, the practice, method, tech-
19 nology, or process would not be adequately
20 demonstrated by State, local, or private per-
21 sons; or

22 “(ii) in the case of an application for fi-
23 nancial assistance by a grant, the practice,
24 method, technology, or process is not likely to

1 receive adequate financial assistance from other
2 sources.

3 “(3) REQUIREMENTS FOR DEMONSTRATION
4 PROGRAM.—The demonstration program established
5 under this subsection shall include—

6 “(A) solicitations for demonstration
7 projects by the Administrator;

8 “(B) the selection of suitable demonstra-
9 tion projects from among proposed demonstra-
10 tion projects;

11 “(C) the supervision of the demonstration
12 projects;

13 “(D) the evaluation of the results of the
14 demonstration projects; and

15 “(E) the dissemination of information con-
16 cerning the effectiveness and feasibility of the
17 practices, methods, technologies, and processes
18 that are proven to be effective under the dem-
19 onstration projects.

20 “(4) SOLICITATIONS.—

21 “(A) IN GENERAL.—Not later than 1 year
22 after the date of enactment of this paragraph,
23 and not less frequently than annually there-
24 after, the Administrator shall publish a sollicita-
25 tion notice for proposals to demonstrate, by

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1 prototype or at full-scale, practices, methods,
2 technologies, and processes that are (or may be)
3 effective in controlling sources or potential
4 sources of water pollution.

5 “(B) CONTENTS OF SOLICITATION NO-
6 TICE.—The solicitation notice shall prescribe
7 the information to be included in the proposal,
8 including technical and economic information
9 derived from the research and development ef-
10 forts of the applicant, and other information
11 sufficient to allow the Administrator to assess
12 the potential effectiveness and feasibility of the
13 practice, method, technology, or process that is
14 the subject of the demonstration project.

15 “(5) APPLICATION.—Any person may submit
16 an application to the Administrator in response to a
17 solicitation under paragraph (4). The application
18 shall contain a proposed demonstration plan setting
19 forth how and when the project is to be carried out
20 and such other information as the Administrator
21 may require.

22 “(6) SELECTION OF DEMONSTRATION
23 PROJECTS.—In selecting practices, methods, tech-
24 nologies, and processes to be demonstrated, the Ad-

1 administrator shall evaluate each project according to
2 the following criteria:

3 “(A) The potential for the proposed prac-
4 tice, method, technology, or process to effec-
5 tively control sources or potential sources of
6 pollutants that present risks to human health.

7 “(B) The potential for the practice, meth-
8 od, technology, or process to contribute to the
9 advancement of pollution control with respect to
10 an industry for which an effluent guideline is
11 published pursuant to section 304.

12 “(C) The potential for the practice, meth-
13 od, technology, or process to effectively prevent
14 the discharge of pollutants that present risks to
15 human health and the environment.

16 “(D) The potential for the practice, meth-
17 od, technology, or process to contribute to the
18 advancement of the treatment of sewage or the
19 management of sewage sludge.

20 “(E) The potential for the practice, meth-
21 od, technology, or process to contribute to re-
22 ductions of pollution associated with nonpoint
23 sources of pollution.

1 “(F) The capability of the applicant to
2 successfully complete the demonstration project
3 as described in the application.

4 “(G) The likelihood that the demonstrated
5 practice, method, technology, or process could
6 be applied in other locations and under other
7 circumstances to control sources or potential
8 sources of pollutants (taking into consideration
9 the cost, effectiveness, and technological fea-
10 sibility of the practice).

11 “(H) The extent of financial support from
12 the applicant to accomplish the demonstration
13 as described in the application.

14 “(I) The capability of the applicant to dis-
15 seminate the results of the demonstration or
16 otherwise make the benefits of the practice,
17 method, technology, or process widely available
18 to the public in a timely manner.

19 “(7) APPROVAL OF APPLICATIONS.—The Ad-
20 ministrators shall approve or disapprove an applica-
21 tion for a project under this subsection in an expedi-
22 tious manner. In the case of a disapproval of an ap-
23 plication for a project, the Administrator shall notify
24 the applicant of the reasons for the disapproval.

1 “(8) AGREEMENT.—Each applicant selected to
2 conduct a demonstration project under this sub-
3 section shall be required, as a condition of receiving
4 funds made available pursuant to this subsection, to
5 enter into an agreement with the Administrator to
6 provide for monitoring, testing procedures, quality
7 control, and such other measurements necessary to
8 evaluate the results of demonstration projects or fa-
9 cilities intended to control sources or potential
10 sources of contaminants.

11 “(9) FEDERAL SHARE.—

12 “(A) IN GENERAL.—Except as provided in
13 subparagraph (B), the Federal share for a dem-
14 onstration project under this section shall not
15 exceed 75 percent of the total cost of the
16 project.

17 “(B) CERTAIN BASIC RESEARCH.—In any
18 case in which the Administrator determines
19 that a research project under this subsection is
20 basic research that would not otherwise be un-
21 dertaken, the Administrator may award a grant
22 for the research project under this subsection
23 with respect to which the Federal share may
24 equal 100 percent of the total cost of the
25 project.

1 “(c) AUTHORIZATION OF APPROPRIATIONS.—There
2 are authorized to be appropriated to the Environmental
3 Protection Agency to carry out this section \$20,000,000
4 for each of fiscal years 1994 through 2000.”.

5 **SEC. 602. STATE CERTIFICATION.**

6 The first sentence of section 401(a)(1) (33 U.S.C.
7 1341(a)(1)) is amended by inserting before the period the
8 following: “and that any such activity will comply with
9 water quality standards adopted under section 303 and
10 allow for the protection, attainment, and maintenance of
11 designated uses included in the standards”.

12 **SEC. 603. REPORTS TO CONGRESS.**

13 (a) CLEAN WATER REPORT.—Subsections (a)
14 through (c) of section 516 (33 U.S.C. 1375 (a) through
15 (c), respectively) are amended to read as follows:

16 “(a) CLEAN WATER REPORT.—

17 “(1) IN GENERAL.—On January 1 of the year
18 following the date of enactment of subparagraph
19 (A), and every 2 years thereafter, the Administrator
20 shall submit to Congress a report on measures taken
21 toward the implementation of the goals and objec-
22 tives of this Act, including—

23 “(A) a summary of the results achieved in
24 the field of water pollution control research,

1 demonstrations, experiments, studies, and relat-
2 ed matters;

3 “(B) a summary of the status of tech-
4 nology-based water pollution controls;

5 “(C) a summary of the development of pol-
6 lutant criteria documents and the adoption of
7 water quality and sediment quality standards;

8 “(D) an assessment of progress in the de-
9 velopment of effluent limitations pursuant to
10 sections 301, 304, 306, and 307;

11 “(E) a description of State nonpoint
12 source pollution control programs;

13 “(F) an assessment of the progress in the
14 identification of and development of programs
15 for water quality problem areas, including—

16 “(i) the national estuary program es-
17 tablished under section 320;

18 “(ii) the Great Lakes program estab-
19 lished under section 118;

20 “(iii) the Chesapeake Bay program es-
21 tablished under section 117;

22 “(iv) other programs that the Admin-
23 istrator considers appropriate; and

1 “(v) other estuaries and rivers for
2 which management conferences are being
3 conducted;

4 “(G) a description of alternative require-
5 ments for effluent discharges established under
6 section 301 or 307 (including any alternative
7 requirement established under section 301(b)(2)
8 or 307(b) on the basis of fundamentally dif-
9 ferent factors (as described in section 301(d));

10 “(H) a description of activities relating to
11 wastewater treatment operator training and
12 certification;

13 “(I)(i) an identification and assessment of
14 noncompliance with the enforceable require-
15 ments of this Act (including an assessment of
16 noncompliance by Federal facilities); and

17 “(ii) a description of all enforcement ac-
18 tions pending or completed under this Act dur-
19 ing the 2-year period immediately preceding the
20 date of the report; and

21 “(J) recommendations concerning improve-
22 ments to the water quality programs authorized
23 by this Act.

24 “(2) CONSULTATION BY ADMINISTRATOR.—The
25 Administrator shall consult with the heads of State

1 agencies in the development of the report required
2 under this subsection.

3 “(b) WATER QUALITY INFRASTRUCTURE NEEDS AS-
4 SESSMENT.—

5 “(1) IN GENERAL.—The Administrator shall
6 conduct a comprehensive assessment of the cost of
7 construction of public facilities needed to accomplish
8 the water quality goals of this Act.

9 “(2) CONTENTS OF ASSESSMENT.—The assess-
10 ment under this subsection shall, at a minimum,
11 describe—

12 “(A) on a national basis, and for each
13 State, the cost of construction for the rehabili-
14 tation, replacement, and upgrading of publicly
15 owned treatment works in existence during the
16 calendar year that is 2 years before the date of
17 the report, including an estimate of the portion
18 of the costs associated with meeting the en-
19 forceable requirements of this Act;

20 “(B) on a national basis, and for each
21 State the cost of construction of expanded or
22 new publicly owned treatment works, including
23 an estimate of the portion of the costs associ-
24 ated with meeting the requirements of this Act;

1 “(C) the cost of implementing plans for
2 the elimination of combined stormwater and
3 sanitary sewer overflows developed pursuant to
4 section 406, including any additional treatment
5 needed to ensure compliance with water quality
6 standards;

7 “(D) the portion of the costs described in
8 subparagraphs (A), (B), and (C) associated
9 with treatment works serving fewer than 2,500
10 individuals;

11 “(E) the cost to Federal, State, and local
12 governments and agricultural producers of the
13 construction of measures to control nonpoint
14 sources of pollution implemented in accordance
15 with programs developed pursuant to section
16 319;

17 “(F) the cost of construction of measures
18 and facilities required to comply with permits
19 for the control of municipal discharges of
20 stormwater;

21 “(G) the cost of implementation of con-
22 servation and management plans approved pur-
23 suant to section 320(f);

1 “(H) the cost of implementation of
2 Lakewide Management Plans and Remedial Ac-
3 tion Plans developed pursuant to section 118;

4 “(I) the cost of implementation of clean
5 lakes projects pursuant to section 314; and

6 “(J) the cost of implementation of water-
7 shed management plans approved by the Ad-
8 ministrator pursuant to section 321.

9 “(3) SUBMISSION OF ASSESSMENT.—Not later
10 than 4 years after the date of enactment of this
11 paragraph, and every 4 years thereafter, the Admin-
12 istrator shall submit the assessment required under
13 this subsection to Congress.

14 “(c) RESERVED.”.

15 (b) ELIMINATION OF OTHER REPORTS.—

16 (1) DEVICES FOR FLOW REDUCTION.—Section
17 104(a)(5) (33 U.S.C. 1254(a)(5)) is amended by
18 striking “, and shall report on such quality in the
19 report required under subsection (a) of section 516”.

20 (2) CHESAPEAKE BAY.—Section 117 (33
21 U.S.C. 1267) is amended—

22 (A) by striking subsection (c); and

23 (B) by redesignating subsection (d) as sub-
24 section (c).

210

1 (3) GREAT LAKES.—Section 118(c) (33 U.S.C.
2 1268(c)) is amended—

3 (A) by striking paragraph (10); and

4 (B) by redesignating paragraph (11) as
5 paragraph (10).

6 (4) OPERATION OF PUBLICLY OWNED TREAT-
7 MENT WORKS.—Title II (33 U.S.C. 1281 et seq.) is
8 amended by striking section 210 and inserting “Sec-
9 tion 210. RESERVED.”.

10 (5) ALTERNATIVE DISCHARGE REQUIRE-
11 MENTS.—Section 301(n) (33 U.S.C. 1311(n)) is
12 amended by striking paragraph (8).

13 (6) CONDITION OF LAKES.—Section 314 (33
14 U.S.C. 1324) is amended—

15 (A) in subsection (a)—

16 (i) by striking paragraph (3); and

17 (ii) by redesignating paragraph (4) as
18 paragraph (3); and

19 (B) in subsection (b)—

20 (i) by striking paragraph (3); and

21 (ii) by redesignating paragraph (4) as
22 paragraph (3).

23 (7) STATUS OF NONPOINT PROGRAMS.—Section
24 319(m) (33 U.S.C. 1329(m)) is amended by striking
25 “(m) REPORTS OF ADMINISTRATOR.—” and all that

1 follows through “(2) FINAL REPORT.—Not later
2 than” and inserting the following:

3 “(m) FINAL REPORT OF THE ADMINISTRATOR.—Not
4 later than”.

5 (8) ESTUARINE RESEARCH AND MONITORING.—
6 Section 320(j) (33 U.S.C. 1330(j)) is amended—

7 (A) by striking paragraph (2);

8 (B) by striking “(j) RESEARCH.—” and all
9 that follows through “In order to” and insert-
10 ing the following:

11 “(j) RESEARCH.—In order to”;

12 (C) by striking “(A) a long-term program”
13 and inserting the following:

14 “(1) a long-term program”;

15 (D) by striking subparagraph (B) and in-
16 serting the following new paragraph:

17 “(2) a program of ecosystem assessment assist-
18 ing in the development of—

19 “(A) baseline studies that determine the
20 state of estuarine zones and the effects of natu-
21 ral and anthropogenic changes; and

22 “(B) predictive models capable of translat-
23 ing information on specific discharges or gen-
24 eral pollutant loadings within estuarine zones
25 into a set of probable effects on the zones;”;

1 (E) by striking “(C) a comprehensive” and
 2 inserting the following:

3 “(3) a comprehensive”; and

4 (F) by striking “(D) a program” and in-
 5 serting the following:

6 “(4) a program”.

7 (9) FEDERAL PROCUREMENT.—Section 508 (33
 8 U.S.C. 1368) is amended by striking subsection (e).

9 **SEC. 604. DEFINITIONS.**

10 (a) DEFINITION OF POINT SOURCE.—Section
 11 502(14) (33 U.S.C. 1362(14)) is amended by adding at
 12 the end the following new sentence: “The term shall in-
 13 clude a landfill leachate collection system.”.

14 (b) CONFORMING AMENDMENT.—Section 507 of the
 15 Water Quality Act of 1987 (33 U.S.C. 1362 note) is re-
 16 pealed.

17 **SEC. 605. INDIAN PROGRAMS.**

18 (a) SEWAGE TREATMENT.—Section 518(c) (33
 19 U.S.C. 1377(c)) is amended—

20 (1) by striking “one-half of one percent of the
 21 sums appropriated under section 207” and inserting
 22 “1 percent of the sums appropriated under section
 23 607”; and

24 (2) by adding at the end the following new sen-
 25 tence: “The Administrator shall provide the funds

1 reserved under this subsection directly to Indian
2 tribes and may make a grant in an amount not to
3 exceed 100 percent of the cost of a project that is
4 the subject of the grant. In making a grant under
5 this subsection, the Administrator shall give priority
6 to projects that address the most significant public
7 health and environmental pollution problems, as de-
8 termined by a needs assessment conducted under
9 paragraph (2).”.

10 (b) NONPOINT POLLUTION CONTROL.—Section
11 518(f) (33 U.S.C. 1377(f)) is amended—

12 (1) in the second sentence, by striking “one-
13 third” and inserting “one-half”;

14 (2) in the third sentence, by striking “(d)” and
15 inserting “(e)”; and

16 (3) by adding at the end the following new sen-
17 tence: “Notwithstanding section 319(h)(3), the Ad-
18 ministrator may make a grant under this subsection
19 in an amount not to exceed 100 percent of the cost
20 of the project that is the subject of the grant.”.

21 (c) REVOLVING LOAN FUNDS.—Section 603(c)(1)
22 (33 U.S.C. 1383(c)(1)), as amended by section 101(a)(2),
23 is further amended by inserting “Indian tribe,” after
24 “State agency”.

1 **SEC. 606. CLEAN WATER EDUCATION.**

2 (a) IN GENERAL.—Title V (33 U.S.C. 1361 et seq.)
3 is amended—

4 (1) by redesignating section 519 as section 520;
5 and

6 (2) by inserting after section 518 the following
7 new section:

8 **“SEC. 519. CLEAN WATER EDUCATION.**

9 “(a) AUTHORITY.—

10 “(1) IN GENERAL.—The Administrator shall es-
11 tablish a national program of education and infor-
12 mation to increase public awareness concerning
13 water quality.

14 “(2) EMPLOYEES TO IMPLEMENT PROGRAM.—
15 The Administrator shall ensure that for each fiscal
16 year, not fewer than—

17 “(A) 5 full-time equivalent employees are
18 assigned on a full-time basis to carry out this
19 section; and

20 “(B) 1 full-time equivalent employee is as-
21 signed on a full-time basis to carry out this sec-
22 tion in each regional office.

23 “(b) VOLUNTEER PROGRAMS.—

24 “(1) IN GENERAL.—The Administrator, in co-
25 operation with the States, shall foster and provide
26 guidance for volunteer citizen programs for the as-

1 assessment, oversight, and protection of individual
2 waterbodies.

3 “(2) HANDBOOK.—Not later than 2 years after
4 date of enactment of this subsection, the Adminis-
5 trator shall publish a handbook and other related in-
6 formational materials with respect to the organiza-
7 tion, management, functions, and activities of volun-
8 teer citizen programs under this subsection.

9 “(3) VOLUNTEER CITIZEN PROGRAMS.—Not
10 later than 3 years after the date of enactment of
11 this subsection, and biennially thereafter, each State
12 shall provide to the Administrator a list of volunteer
13 citizen programs and the waterbody served by each
14 program included in the list. Not later than 180
15 days after receiving the State lists required to be
16 submitted pursuant to this paragraph, the Adminis-
17 trator shall publish a national list of volunteer citi-
18 zen programs that includes the information in the
19 State lists.

20 “(4) FEDERAL ENFORCEMENT.—In the case of
21 any action taken pursuant to subsection (c) or (d)
22 of section 309, an appropriate Federal official shall
23 advise the court of any volunteer citizen program
24 listed pursuant to paragraph (3) for the waterbody
25 associated with the violation.

1 “(c) AWARDS.—

2 “(1) IN GENERAL.—The Administrator shall
3 implement a program to provide official recognition
4 of the Federal Government to industrial organiza-
5 tions, political subdivisions of States, and volunteer
6 citizen programs that have demonstrated an out-
7 standing commitment to the prevention and control
8 of water pollution.

9 “(2) SELECTION BY REGIONAL ADMINISTRA-
10 TORS.—Each regional administrator of the Environ-
11 mental Protection Agency shall select not more than
12 3 industrial organizations, 3 political subdivisions,
13 and 3 volunteer citizen programs within the region
14 under the jurisdiction of the regional administrator
15 for an award under this subsection for each fiscal
16 year.

17 “(3) SELECTION BY ADMINISTRATOR.—The Ad-
18 ministrator shall select from the organizations, polit-
19 ical subdivisions, and volunteer programs that re-
20 ceive awards pursuant to paragraph (2) not more
21 than 3 industrial organizations, 3 political subdivi-
22 sions, and 3 volunteer programs to receive national
23 awards.

24 “(4) FORM OF AWARD.—The Administrator
25 shall award a certificate or plaque of suitable design

1 to each industrial organization, political subdivision,
 2 or volunteer program that receives an award under
 3 this subsection.

4 “(5) NOTICE AND PUBLICATION.—The Presi-
 5 dent, the Governor of the appropriate State, the
 6 Speaker of the House of Representatives, and the
 7 President pro tempore of the Senate shall be notified
 8 of each award under this subsection by the Adminis-
 9 trator, and the awarding of the recognition shall be
 10 published in the Federal Register.”.

11 (b) TECHNICAL CORRECTIONS.—

12 (1) Section 104(c) (33 U.S.C. 1254(c)) is
 13 amended by striking “Health, Education, and Wel-
 14 fare” and inserting “Health and Human Services”.

15 (2) Section 501 (33 U.S.C. 1361) is amended—

16 (A) by striking subsection (e); and

17 (B) by redesignating subsection (f) as sub-
 18 section (e).

19 **SEC. 607. NATIONAL ESTUARY PROGRAM.**

20 Section 320 (33 U.S.C. 1130) is amended—

21 (1) in subsection (g)(2), by inserting “and im-
 22 plementation” after “development”; and

23 (2) in subsection (i), by striking “1987, 1988,
 24 1989, 1990, and 1991” and inserting “1987
 25 through 2000”.

○

REAUTHORIZATION OF THE CLEAN WATER ACT

WEDNESDAY, JUNE 23, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

FUNDING; STORMWATER AND COMBINED SEWER OVERFLOWS

The subcommittee met, pursuant to notice, at 10:07 a.m. in room SD-406, Dirksen Senate Office Building, Hon. Max Baucus [chairman of the full committee] presiding.

Present: Senators Baucus, Faircloth, Lautenberg, Chafee, Kempthorne, Durenberger and Wofford.

Senator BAUCUS. The hearing will come to order.

Good morning, everyone.

The chairman of the subcommittee, Senator Graham, is unable to be here at this time. He's at the White House. He will join us when he is able. He has a statement that will be included in the record. In his absence, I will chair this hearing. There may be a time when I will leave and Senator Chafee will then chair the meeting until Senator Graham arrives.

Today's hearing is about two related problems under the Clean Water Act. Before I get into those, I'd like to put in the record an editorial from today's Washington Post entitled, "The First Big Environmental Bill." It states approvingly of the efforts of Senator Chafee and myself in reauthorizing the Clean Water Act.

[Senator Graham's statement and the editorial referred to follow:]

STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

This is the second in a series of hearings to be held by this subcommittee on the reauthorization of the Clean Water Act. Last week, we began the series by looking at some broad policy questions and announced some of the problems that remain unsolved by the Act.

While broad questions remain, today we begin to get into some of the details. Today, we will focus for the most part upon our cities and upon funding issues.

There are several important funding questions. The first of these is whether to continue federal funding and, if so, how much and for how long? Since 1972, the federal government has provided about \$60 billion in construction grants assistance to help communities comply with the Act. Over the years, the level and manner of assistance has changed. In 1981, the level dropped from \$5 billion to \$2.4 billion and the types of projects eligible for funding was restricted. In 1987, the grants program was replaced with one that established State Revolving Funds. The new program had a simple premise: states would lend federal and state dollars to communities, who would pay them back, thus creating a continuous source of funding that sus-

tained itself and "revolved." This feature allowed federal support to be phased out over several years and to expire after 1994.

The bill before us not only extends federal funding to SRFs through the year 2000, but gradually increases the level from \$2.5 billion in 1995 to \$5 billion in the year 2000, so long as deficit reduction goals are met along the way. The justification for this change in policy seems to be grounded in the continued need for federal support.

We are told that EPA has reported more than \$80 billion in un-met needs in our cities nationwide just for major wastewater treatment facility construction and repair and that the cities have identified \$30 billion more on top of that. But, staggering as these figures are, they don't cover stormwater or combined sewer overflows. They don't cover non-point source pollution and they don't cover drinking water. I believe we will hear a great deal today about the needs of our cities.

The second question is how should the SRFs be used to maximize the federal funds we do provide to try to meet some of these needs. When I was Governor, we had a state program similar to the SRF that provided funding just for the construction phase because that was when cities had the most difficult time securing financing. After construction, cities used the revenues they collected to secure their permanent financing. I want to explore how we can make the SRF revolve more quickly. We also need to look at the issue of leveraging as we try to utilize federal funds in a manner that will generate the most effective use of funds from other sources.

Third, we must look at the way these funds are allocated to the states. Every two years, EPA completes a survey with the states to determine their funding needs under the SRF. Incredibly, we have ignored the last seven of these surveys and continue to allocate federal dollars to the states based on the needs survey completed in 1978. This distortion of reality results in some states getting far more than they need, while others get a fraction of their needs met.

We will also address other critical funding issues, including how to help our small and disadvantaged communities and whether to again expand the projects eligible for SRF funding. Since it is clear that we have failed to address all the needs in the country that are currently covered, we must discuss the wisdom of trying to fund new categories of need.

I also want us to address how we can make the approaches to wastewater treatment and stormwater more environmentally appropriate, but also more cost-effective. On Monday, I worked at a sewer plant in West Palm Beach, Florida, which is considering methods of recycling water. Today that water is injected into very expensive deep wells. This recycling not only has the potential of saving a valuable resource, but also of enhancing the economic viability of wastewater treatment.

We also need to look at how federal government can encourage practices that would prevent pollution, such as land use practices that would mitigate stormwater runoff and facilitate the most efficient governmental structures, such as regional cooperation among local governments to construct the most cost-efficient disposal systems. How well have these efforts worked in the past and how should they be considered as part of the reauthorization of the Clean Water Act?

Finally, we will address two other issues of great importance to our communities: the regulation of stormwater and combined sewer overflows.

These are distinct problems. Our cities tell us that they simply cannot afford stormwater regulation under the Clean Water Act, especially when faced with other burdens, including solid waste management and wastewater treatment. They tell us that it will be prohibitively expensive to comply with effluent guidelines and permits for each of the 8 million stormwater outfalls.

The bill before us provides these communities with some relief. Small cities, those whose population is 100,000 or less, would be not have to obtain separate stormwater permits. The large and mid-sized cities would be subject to EPA guidelines, but would not be required to comply with effluent guidelines or water quality standards for 10 years. The cities desperately seek this relief, while those in the environmental community fear that this represents yet another delay in a series of delays to require cities to address serious pollution problems.

We need to discuss today whether the bill provides the best approach to solving these economic issues, while still providing adequate environmental protection.

Combined sewer overflows occur in systems that combine wastewater and stormwater, thus creating the risk that during severe storms, the volume of water will overload the wastewater treatment facilities, spilling untreated waste into the waterways. This is a problem primarily affecting some of older cities in the Northeast, Mid-West and Far West and the potential cost is also in the billions. The bill adopts a consensus policy adopted by EPA with the assistance of environmental groups and the cities. We will discuss the adequacy of that approach in addressing this problem.

As can be seen, some of these issues can become quite complex. We will try to get the best advice from our witnesses as we go along. As I indicated last week, we will ask our witnesses to utilize the provisions of S. 1114, filed last week by Senators Baucus and Chafee, in giving detailed analysis and recommendations for Subcommittee action. In this fashion, I hope to focus the Subcommittee's attention upon real problems, the best solution for them, and the legislative language that would incorporate that best answer.

The Washington Post

AN INDEPENDENT NEWSPAPER

First Big Environmental Bill

THE FIRST MAJOR piece of environmental legislation in this Congress seems likely to be a strengthening of the Clean Water Act. House and Senate committees have both begun work on such a bill. The administration is also working out a position, though five months into the president's term the key official—assistant administrator for water at the Environmental Protection Agency—has yet to be appointed. Last week EPA Administrator Carol Browner testified in mostly general terms on a thoughtful draft bill by Sens. Max Baucus and John Chafee of the relevant Senate subcommittee. At this point the senators are well ahead of the administration; theirs is the most authoritative draft around.

For most of its 21 years, the Clean Water Act was mainly aimed at building new municipal sewage treatment plants and reducing industrial water pollution. The success has been such that most pollution now is the trickier general agricultural and other runoff that comes from so-called non-point sources. In a given watershed there may be thousands of mostly small contributors to such pollution, from dairy farmers to municipal storm sewer systems. Basically this is pollution resulting from land use, traditionally a state and local rather than federal regulatory preserve, and a bewildering array of often private management practices. How to change them, and how to pay the cost?

All sides agree that for flexibility's sake the federal government should operate mainly through the states. But who defines clean and how best to achieve it? What standards does the federal government set, what aid does it offer the states to achieve them and what

sanctions does it apply if they fail? The Baucus-Chafee bill would use more carrot than stick; that seems to be the administration's inclination as well, but this is a question whose answer will lie in the fine print. "Voluntary, targeted approaches should remain the primary focus," the EPA administrator testified the other day, "but backup enforcement requirements . . . are needed when voluntary approaches fail." Where would the administration draw the line?

Resort to the carrot also depends on funding. Most clean water funding over the years has been for sewage treatment plants. The Reagan administration moved in 1987 to phase that out in favor of state revolving funds to which the federal government would make the initial contributions. The Clinton administration now hopes in the name of investment to keep up the contributions, thereby expanding the funds. Baucus-Chafee would do much the same—and both would expand the uses of the funds to combat the broader runoff problem, for which the senators would authorize a special appropriation as well. The trouble is that all these are authorizations only, subject to the tight appropriations caps to which the administration has agreed for the next five years. Ms. Browner also warned that the sewage treatment problem isn't over; cities will continue to bid for available funds. The administrator said that the new legislation needs to be "realistic in light of the resources we can reasonably expect to be available." But "realistic" is also a matter of policy: how much money the president sets aside and fights for in his budget. At some point in the legislative process the administration will need to speak in more detail.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR
FROM THE STATE OF MONTANA

Senator BAUCUS. The first of the two problems that we address this morning is municipal water pollution. I think we've made great progress since 1972 dealing with municipal water pollution, but municipalities across the country are still responsible for significant water pollution problems. They are still responsible for inadequately treated sewage, for overflows of raw sewage from combined sewer overflows, and dirty stormwater.

The second problem is the high cost of measures to reduce municipal water pollution. The EPA estimates that there is a \$60 billion backlog of unfunded sewage treatment projects. This doesn't even account for the new projects needed to accommodate population growth and it doesn't account for combined sewer overflows and stormwater. So there's tension. On the one hand, we have to further reduce municipal water pollution, and on the other hand, we have to face up to the cost. This hearing is about resolving that tension.

Let me suggest five key principles. First and foremost, restoration of a full partnership between the Federal Government and State and local governments. Communities have an obligation to solve their pollution problems. The Federal Government has an obligation to help. I believe that the existing State loan funds are the best vehicle for providing this help. I also believe that the Federal contribution should be doubled by the year 2000.

Second, it is not enough to simply spend more money. We also must assure that scarce Federal money is spent more efficiently. For example, some States leverage the revolving loan funds to more than double the number of projects than the funds support. A new Clean Water Act can encourage such innovative financing so we get more environmental bang for our Federal buck.

Third, we must also support innovative pollution control methods. For example, for many years, we have assumed that the only solution to the problem of overflows of raw sewage from combined sewers was to build separate storm sewers and sanitary systems. Today, however, there is a growing recognition that separation is expensive and sometimes unnecessary. Instead, through better management of stormwater, better planning for new development, and better use of existing facilities, we may be able to achieve the same result more cheaply. We must encourage these and other innovative methods.

Fourth, we must acknowledge that effective control of some municipal pollution problems takes time. In some cases, communities may need relief from existing requirements. Combined sewer overflows do demand our attention but the current provisions of the Clean Water Act simply don't fit. We need to revise the Act to allow for development of control plants over a more realistic time frame of up to 15 years.

In addition, we need to reexamine the existing requirements of permits for discharges of stormwater from small communities, especially where receiving waters are not impaired.

Finally, we must respond to small communities that face excessive costs for new water pollution control projects. I've heard from

communities all across my State about this, I daresay that every Senator has heard the same complaints. I know that because I hear them mention them. The existing loan program does not allow States to provide sufficient financial support to these communities and we must revise the Clean Water Act to address this problem, including providing new authority to forgive an appropriate amount of loan repayment.

With these principles in mind, I look forward to hearing from our witnesses.

I'd now like to turn to the ranking member of the committee, Senator Chafee for any comments he might have.

**OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR
FROM THE STATE OF RHODE ISLAND**

Senator CHAFEE. Thank you, Mr. Chairman.

I congratulate you on that editorial in the Washington Post.

Senator BAUCUS. I congratulate you. It takes two to get this bill together.

Senator CHAFEE. Well, thank you, and it's nice to have a kind word from the Washington Post.

[Laughter.]

Senator CHAFEE. As for Senator Graham being detained at the White House, you indicated I would be here to Chair. Yes, that's quite true. I will not be called to the White House regrettably, so I'll be available to cover.

[Laughter.]

Senator CHAFEE. Mr. Chairman, I have statement I'll put in the record, but I'd like to summarize it briefly if I might.

In 1972, we started to fund the secondary treatment of sewage discharges and since then, we've spent some \$60 billion of Federal grants. Almost all cities are now in compliance with secondary treatment and tremendous improvements in the water quality have resulted.

Now, there are other problems which the Mayor and others are going to introduce—combined sewer overflows, stormwater discharges, nonpoint source pollution and habitat loss—all of which contributes to impairing our waters.

So in 1987 as we looked toward the phaseout of this program, we started the Revolving Loan Program in the States and that's been a big success. In my State, for example, our biggest problem is combined sewer overflows and we recently adopted a plan to spend, if you think of it in our little State, \$467 million, amongst other items, to build a 10-mile tunnel that will capture and store stormwater for treatment before it's discharged into one of the jewels of our State, namely Narragansett Bay.

In addition to that, we've got problems which the Mayor and others will perhaps address. Along the shores of our bay, we have individual septic tanks which have failed, in large numbers I might say, all contributing to pollution in the bay.

So the bill that Senator Baucus and I have introduced would make it possible for Rhode Island and other States to solve problems by using their SRFs to finance needed projects. There's one item in the bill, Mr. Chairman, that does give me some trouble and

I'd be interested in what the witnesses have to say. That's the fact that many small communities have not been able to take advantage of the SRF Program because they cannot afford to repay a loan. So what we've done in here is to allow States to use up to 20 percent of their Federal grant to reduce the amount of loan principle that has to be repaid by disadvantaged communities.

That's a lot of words but what it basically says is 20 percent can go to the small communities to reduce the principal that they have to pay under the revolving fund.

I understand the problem of the small communities—you've got them in your State and I've got them in mine—but I do think we've got to be careful of returning to the old Construction Grants Program where money is just going out in grants. So I'll be interested to hear any comments from the witnesses in connection with that testimony.

Mr. Chairman, I'll put in my entire statement in the record and look forward to hearing from the witnesses.

[Senator Chafee's statement follows:]

STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Mr. Chairman, today the Subcommittee will consider Clean Water reauthorization issues that are of special interest to local governments. Stormwater, combined sewer overflows and the future of the revolving loan fund program are at the top of their list.

As everybody knows, the federal role in financing sewage treatment projects is scheduled to end next year. The authorization for federal grants to create and expand State Revolving Funds expires in 1994. Based on the 1981 and 1987 amendments, most people have assumed that the program would not be extended.

Back in 1981, when we first contemplated an end to federal grants for sewage treatment, we were focused on the mandate in the Clean Water Act that requires secondary treatment sewage discharges. That is a federal mandate dating back to 1972. We were determined to fund that mandate and we have. Sixty billion dollars in federal grants have been made since 1972. Almost all cities are now in compliance with the secondary treatment requirement. Tremendous improvements in water quality have resulted.

But there are other water quality problems—combined sewer overflows, stormwater discharges, nonpoint source pollution, and habitat loss—that continue to impair our waters. The federal interest in solving these problems may be even greater than our original interest in construction of sewage treatment plants.

The State Revolving Fund program we created in 1987 has been a very great success. The states have done a splendid job managing these funds. The SRFs have been so successful that we now hope to use this mechanism to address additional water quality problems.

For instance, in Rhode Island our biggest problem is combined sewer overflows. Recently, Rhode Island adopted a plan to spend \$467 million to build a 10-mile tunnel that will capture and store stormwater for treatment before it is discharged into Narragansett Bay. In addition, we have many areas along the shores of the Bay where individual septic tanks have failed in large numbers and are now a major source of pollution. The bill that Senator Baucus and I have introduced would make it possible for Rhode Island and other states to solve problems like these by using their SRFs to finance needed projects.

There is one item in the bill, the proposed assistance to small communities that we included for discussion purposes, that gives me particular concern. Many small communities have not been able to take advantage of the SRF program because they cannot afford to repay a loan. The proposal in S. 1114 would allow states to use up to 20% of their federal capitalization grant to reduce the amount of loan principal that has to be repaid by disadvantaged communities. I am not opposed to special help for these communities, but I do worry that this proposal puts us on the verge of returning to the old construction grants program.

My suggestion is this. Instead of using federal dollars for grants, we should encourage states to provide assistance to disadvantaged communities out of funds ap-

propriated by state legislatures. If a state sets up a grant program, we could count their efforts toward the matching requirement for the federal grant. The matching requirement is 20% so small communities would get the same amount of assistance. I fear that if we offer federal funds to meet the needs of small communities directly, we won't be able to hold the line at 20%. We may be putting the very concept of revolving funds at risk by suggesting that federal funds can once again be used for grants.

Mr. Chairman, I have reviewed the testimony of the witnesses and I am pleased to say that it is quite supportive of our bill. One hears constantly about the problems that cities are having with federal mandates and environmental regulations. I hope that we have started to turn the corner on that problem with the stormwater and CSO provisions included in this bill.

Senator BAUCUS. Thank you very much, Senator.
Senator Faircloth?

**OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S.
SENATOR FROM THE STATE OF NORTH CAROLINA**

Senator FAIRCLOTH. Thank you, Mr. Chairman.

I want to thank Chairman Graham in his absence for his leadership in this year's reauthorization of the Clean Water Act.

I might have to leave a few minutes early before I get to my questions. If I do, I want to submit them for the record. I'll be going to the Banking Committee, not to the White House.

[Laughter.]

Senator FAIRCLOTH. The Clean Water Act is one of our most successful environmental laws. The Nation's waters are cleaner today than anytime in the recent past. I want, as a member of this committee, to build on their success with responsible legislation targeted to correct the most vital remaining water quality problems in a cost effective manner.

As far as today's subject, I am pleased with parts of the bill and less pleased with all of it. I would like to have some more flexibility built into S. 1114 for encouraging public-private partnership for the construction and ownership of municipal water plants. I think the taxpayers will ultimately benefit if we encourage private sector ownership and operation of traditional government services.

I am pleased to see the effluent provisions for stormwater from last year's bill was lifted and replaced with more reasonable guidelines based on management practices. I am concerned with expanding the eligibility for State revolving funds for combined sewer overflows if that means a new formula that will short change States with modern sewer systems.

North Carolina has virtually no combined sewage overflows, Senator Chafee, because our systems are newer and more modern and therefore we have no overflow. I don't think we should be penalized in future formulas because that is not one of our problems.

More importantly, I would like the assurance of the administration that the expanded funding for State revolving funds is absolutely justified in light of the ballooning Federal deficit.

I think we should only be spending money for a national emergency and I'm not sure that the expansion is justified on the basis of a national emergency. Perhaps the sewer problem does constitute an emergency, but I have my doubts.

I'll look forward to the committee coming through this year with a common sense Clean Water bill, one in which taxpayers, municipi-

palities, and industry and the environmental groups can all find some common ground.

Thank you, Mr. Chairman.

Senator BAUCUS. Thank you very much, Senator.

I'd now like to introduce the first panel. They include: Donald Fraser, Mayor of Minneapolis—very good to see you, Don; Mr. Greg Smith, Chairman, Municipal Assistance Task Force from the Ohio Environmental Protection Agency, Columbus Ohio; Mr. Edward Wagner, Deputy Commissioner, New York City Department of Environmental Protection; Mr. Bob Adler, representing the Natural Resources Defense Council; and Ms. Martha Prothro, Acting Assistant Administrator for Water, U.S. Environmental Protection Agency.

Before I have you speak, I'd like now to introduce some visitors from Russia at the request of Mayor Fraser. I'd like you all to stand, please, when I mention your name.

First, we have Konstantin Nikulin, who is General Secretary of the Union of Russian Cities; Valery Kirpitchenkov, President, URC, a Member of Parliament; and Vladimir Varnavsky, Omsk Council Chairman, URC Board. Welcome to the United States.

Apparently they are visiting and Mayor Fraser can explain in more detail precisely the nature of the program. Why don't you do that, Mayor, before you begin your testimony?

Mayor FRASER. Thank you very much, Mr. Chairman.

Thank you for introducing our guests. They are the leaders of the Union of Russian Cities, an organization which is a counterpart to the National League of Cities in the United States. This is our first formal meeting. They were organized about two years ago and we're looking forward to exchanges, to provide technical assistance, and to learn from one another.

Senator BAUCUS. That's very good.

I'd like to tell each of the witnesses that your full statements will be included in the record. You'll have 5 minutes to summarize your testimony.

Why don't you begin, Don?

Senator CHAFEE. Mr. Chairman, I'd just like to join in the welcome to the friends from Russia and say we're glad they are here.

I'd also like to say, Mr. Chairman, that I believe I'm correct that one of Mr. Donald Fraser's predecessors as Mayor of Minneapolis was Hubert Humphrey.

Senator BAUCUS. That's right.

Senator CHAFEE. So what lies ahead for you?

[Laughter.]

Mayor FRASER. My first political job was as an office boy in his campaign for the United States Senate in 1948.

Senator BAUCUS. Thank you very much. Why don't you proceed, Don?

STATEMENT OF HON. DONALD FRASER, MAYOR, MINNEAPOLIS, MINNESOTA, REPRESENTING THE NATIONAL LEAGUE OF CITIES

Mayor FRASER. Thank you, Mr. Chairman and members of the committee.

I am Don Fraser, Mayor of Minneapolis and President of the National League of Cities. I'm here to testify on behalf of the National League of Cities and the 16,000 cities and towns across the country that we represent on Senate 1114, the Water Pollution Prevention Control Act of 1993.

My remarks will be quite brief and I've tried to summarize the high points in my longer statement.

We're very pleased that both Senators Baucus and Chafee have taken the critical first step toward restoring our governmental partnership that the Chairman referred to. We think that is essential if we are to accomplish our mutual national environmental objectives.

The priority Clean Water Act issues for our cities in the country are substantially addressed in your proposal—clarification of congressional intention, revisions of the Stormwater Management Program, revision of the requirements for addressing pollution from combined sewer overflows and a continuing Federal financial commitment to municipalities to assist in implementation of the Clean Water Act requirements.

The other issue in which we have a vital interest is how you resolve the current conundrum on wetlands and we look forward to reviewing that proposal when it is completed.

The Stormwater Program has been a major issue for the National League of Cities for over 10 years. We've been to the Congress three times on this issue over the past several years, seeking and obtaining delays in implementation of the program for the Nation's smaller cities and towns. The bill pending before you at long last begins to address the real issues facing municipalities in implementing the Stormwater Program.

What we believe has been poorly understood is that no one, not EPA, not the Congress, nor the environmental community, has ever made a credible case to municipal officials that urban stormwater runoff is a priority problem deserving the investment of millions if not billions of scarce local dollars. We've not been convinced that pollution from urban runoff is an issue that can be addressed effectively regardless of the resources invested; nor do we believe that municipal stormwater is the major contributor of what, in effect, is a nonpoint problem of ongoing pollution in our rivers and streams.

For NLC, the bottom line on the stormwater amendment is no end-of-pipe requirements and Senate 1114, at least for the foreseeable future, provides municipalities with that absolutely essential relief.

The provision in your bill that imposes a 10-year moratorium on numerical effluent limits and water quality standards cannot be amended or deleted. You've taken an important step in the right direction and from our perspective, it is not negotiable.

It is also important for you to understand that while the provisions in 1114 are a vast improvement over where we are now, the alternative is not without significant cost. The recent estimates indicate that even the least costly strategies to control pollutants and urban runoff will cost municipalities over \$1.1 billion a year. That represents an average cost of half a million dollars a year for the cities that will be required to implement a stormwater manage-

ment program. The CCMA guidance goes far beyond these least costly strategies.

We would like to recommend several revisions to your proposal. First, we would like to see an amendment to the current regulations which require municipal industrial facilities, such as municipal garages, sewage treatment plants and airports, to obtain individual permits. These facilities should be incorporated within the system or jurisdiction wide permit.

Second, we propose that you dedicate some Federal resources to finding the techniques that will accomplish the objectives of a stormwater management program. We would propose you consider a set aside from the SRF appropriations for a research program to help develop effective stormwater management strategies and programs.

Third, we recommend that you incorporate a legislative role for local officials in the rewrite of the CCMA guidance as it applies to municipal stormwater programs.

The Baucus-Chafee measure is, again, a significant step in the right direction and while we are disappointed that no Federal funds are made available for grants to municipalities, the bill does, in our opinion, demonstrate a renewed Federal commitment to meeting Clean Water Act needs by reauthorizing funds for the SRF, by providing for grants to distressed communities regardless of size and by expanding the pollution control activities eligible for financial assistance.

Mr. Chairman, that is essentially a summary of my longer statement which I understand will be a part of the record.

Senator BAUCUS. Thank you very much, Mayor.

Next, Mr. Smith?

STATEMENT OF GREG SMITH, CHAIRMAN, MUNICIPAL ASSISTANCE TASK FORCE, OHIO ENVIRONMENTAL PROTECTION AGENCY, REPRESENTING THE ASSOCIATION OF STATE AND INTERSTATE WATER CONTROL ADMINISTRATORS

Mr. SMITH. Good morning, Mr. Chairman, Senator Chafee, and members of the committee.

I'm very pleased to be here this morning to address you. You have a written statement, I believe, which incorporates our comments. I'm not going to attempt to summarize all of those but there are a few major points I would like to emphasize this morning.

At the outset, I'd like to say that the comments I'm going to make may raise more questions than provide answers for you but it's our intent to let you know some of our concerns so that we can begin a dialog over the next few months and work toward the best win-win situation on the bill that we can.

I'm here representing the Association of State and Interstate Water Pollution Control Administrators. Our association believes that we need to build upon Clean Water Act successes of the past, but also while we make improvements to the Act, we need to ensure that we don't jeopardize the benefits that we've already achieved.

Many of the programs that have already been developed have been very successful such as the State Revolving Loan Fund and

we want to ensure that those continue in the same manner of effectiveness and efficiency that they have. The newer programs, such as the Stormwater Program and the Combined Sewer Overflow Program are going to require a good deal of dialog to work out the details.

With regard to the State Revolving Loan Fund, we believe that the States have been very successful in broadly fulfilling their part of the 1987 covenant which established the SRFs. As you remember, that was a move from the Grants Program into the State Revolving Loan Program.

We believe it is worthwhile to remember two basic tenets of that 1987 covenant. One was that adequate funding would be available to replace the Construction Grants Program and allow the SRFs to broaden the role of a Federal-State partnership in financial assistance. The second is that the States are to be afforded maximum flexibility in developing their State programs and the assistance mechanisms to meet the unique Clean Water Act needs of their individual circumstances. We would like to respectfully remind the Congress that both of us need to keep in mind our various responsibilities in that covenant.

In the area of appropriations, we believe that the record is clear, the appropriations from the original 1987 authorized amounts for the SRF loan are \$1.7 billion short to date and currently, the States stand in the shadow of a reduced appropriation for fiscal year 1994.

At the same time, the Clean Water's eligibilities have been dramatically expanded since the 1987 covenant, but the funding commitment to date has not. We believe it is key to the successful administration of the SRFs that the States must have confidence, that adequate and predictable levels of funding will be available to address the traditional and the new Clean Water Act needs. The current proposal expands eligibility without concomitant increases in appropriations. Another concern is that grants to individual cities and set-a-sides continue to divert funds that could be appropriated to the SRF. Since 1987, we have been left with the impression that the SRF receives what remains after the special grant projects have been funded from the appropriation.

We believe that the Congress needs to reaffirm its commitment to a proven program, such as the State Revolving Loan Fund, and authorize appropriate and adequate levels of funding. This funding commitment would allow States to be less conservative in planning their cash flows and, in all likelihood, may well increase the willingness of some States to leverage their funds to provide even more assistance at any given point in time.

The other area of principal concern to us is the ability of the States to have flexibility to manage their SRFs. One of the most desirable characteristics of the SRF is the ability of State pollution control agencies and the State financing authorities to be innovative in developing mechanisms to assist in achieving the Act's objectives. There is much emphasis placed on innovative technologies and what's been happening in the intervening years since 1987 is that the States and State financing authorities have been hard at work to develop innovative financing mechanisms to go along to complement technological advances.

We believe that some of the refinements that are proposed in the current bill, while they are grounded in desirable policy objectives, we are concerned that they may impair the States' ability to continue the creative work that we are now pursuing in carrying out the Act.

Without going into detail, some of the provisions that we are concerned about are the 200 percent binding commitment requirement, the expansion and contraction of eligibilities and permitted types of assistance. In particular, we're very unclear about the intent of the proposed section 603(c)(2)(A). We are concerned about the recreation of a grants program which would operate outside of the SRF. We are concerned about the loan forgiveness provisions that are proposed for disadvantaged communities. We are concerned about the limited number of changes to facilitate the small, hardship and rural community funding.

Senator BAUCUS. I'm going to have to ask you to summarize, Mr. Smith.

Mr. SMITH. With regard to combined sewer overflows, we applaud the direction the committee is moving in that area toward implementing the national policy. The specifics on our comments on that proposal are contained in my written testimony.

As far as the Stormwater Program is concerned, we are very worried about an excessive or large number of permits coming into being all at the same time and overwhelming a State's capability to monitor and ensure water quality improvements as opposed to issuing permits exclusively.

In closing, we are very interested in working collaboratively with the committee and the staff over the next few months.

Senator BAUCUS. Thank you very much.

Mr. Wagner?

**STATEMENT OF EDWARD WAGNER, DEPUTY COMMISSIONER,
NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION,
REPRESENTING THE ASSOCIATION OF METROPOLITAN
SEWERAGE AGENCIES**

Mr. WAGNER. Good morning.

I'm pleased to be here today to provide AMSA's perspective on the reauthorization of the Clean Water Act and the recently introduced Water Pollution Prevention and Control Act of 1993, Senate 1114. We appreciate this opportunity to share our thoughts and recommendations as environmental practitioners dedicated to protecting and improving the quality of the Nation's waters.

AMSA supports the reauthorization of the Clean Water Act and its goal of fishable and swimmable waters. Let me outline AMSA's vision for this reauthorization.

We believe the reauthorization must provide an integrated and comprehensive strategy that allows setting appropriate priorities for achieving water quality goals. It must recognize the wide range of conditions present in our Nation's watersheds and provide flexibility to decisionmakers so that they can address site specific needs. It must target all impediments to ecosystem health. It must develop mechanisms for control that properly balance environmen-

tal gains and their cost effectiveness. It must provide the funding to implement its clean water mandates.

While this is AMSA's vision for the reauthorized Clean Water Act, we also acknowledge in our initial review of Senate 1114 that the Senate legislation goes a long way toward the realization of these principles and we commend Senator Baucus and Senator Chafee for introducing this legislation that clearly moves the Clean Water Program forward.

AMSA has recently initiated a detailed review of this bill and will be reporting on specific comments and recommendations to the subcommittee in the coming weeks.

It is important to put reauthorization of the Clean Water Act into an historical perspective. The Nation, its States, cities and towns have made enormous progress in the 20 years since the passage of the 1972 Act. Back then, national standards that targeted point sources made sense because we had huge problems, much of which were traceable to easily controlled sources. Congress provided funding, deadlines and enforcement tools. Coupled with great public support and motivation, this set the stage to successfully address many of our clean water challenges.

Today, the problems are different and so must be the solutions. While public support for environmental progress and improvement continues, the remaining clean water issues we must address are much more complex and costly.

The control of combined sewer overflows and the management of stormwater and nonpoint sources of pollution exemplify the dilemma of how to fund major priorities in the face of unprecedented fiscal shortfalls at every level of government.

Today, we must find a way to reconcile the constraints of the 1990s with our continued high expectations and the need to make continuing progress. Reconciling constraints with expectations within the context of a reauthorized Clean Water Act will involve several things.

The first is an increased and ongoing Federal financial commitment to funding clean water mandates. Attached to my testimony is a report AMSA has published called, "The Cost of Clean." Among the key findings of the report are the following. Funds totaling over \$23 billion will be required for AMSA member agencies alone to meet currently mandated clean water needs to the year 1995. We can expect operation and maintenance costs which are paid totally by local government to double every 8 years. Historical data allows us to project that annual household user fees will double every 6 years and that currently, local governments pay 80 to 90 percent of the "Cost of Clean".

I believe that we, my colleagues on this panel, and the members of the distinguished committee should work together to ensure Federal resources are forthcoming. We must not lose sight of the fact that the Clean Water Act sets forth a national program with an integral relationship to our Nation's long-term environmental health and economic growth.

We are all impatient to aggressively restore our Nation's water environment. AMSA's long-term funding position calls for a \$6 billion a year Federal commitment based upon what we believe is an accurate reflection of the funding needs to effectively meet existing

requirements. Plainly stated, Federal support is essential if we are to meet the clean water challenges we face as a Nation.

In my testimony, I talk about the support that we have for the provisions regarding combined sewer overflows. In this national policy, that was developed through collaborative means, national direction is coupled with sufficient flexibility to consider site specific variables and it is welcomed as a solution to a complex problem.

Some of my colleagues on this panel will have much more to say than I concerning the approach to the issue of stormwater management, but AMSA would like to speak in support of the draft bill's recognition of the effectiveness of best management practices and endorses the legislation's movement away from the requirement of numeric water quality limits in stormwater permits.

Last, let me comment that praise and support are deserved for the attention paid in Senate 1114 to many longstanding programs, as well as the important areas of pollution prevention, water conservation and what we are convinced must be the future direction of our Nation's clean water program, comprehensive watershed management. We will be submitting additional testimony at a future hearing on that subject.

In conclusion, let me suggest the following. We need to consistently search for better ways of doing things and to AMSA that means more flexibility and more attention to site-specific variables; a better public awareness of what the problems are, the importance of solving them, and the best solutions.

Local consensus building must become an essential step in the framework for reaching the environmental milestones we've set. We must strive toward implementation of the most effective, pragmatic means through which we can accomplish our national clean water goals. There has to be a measurable and meaningful return for our investment.

Senator BAUCUS. I have to ask you to summarize, please.

Mr. WAGNER. We all recognize that we have a long way to go. However, by working together, I know we can succeed. We look forward to working closely with the subcommittee and I'd be pleased to answer any questions you might have.

Senator BAUCUS. Thank you very much.

Mr. Adler?

STATEMENT OF ROBERT ADLER, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

Mr. ADLER. Thank you, Mr. Chairman.

I'm a senior attorney and Director of the Clean Water Program at NRDC. I also chair the Steering Committee of the National Clean Water Network which has more than 420 groups around the country working together to strengthen the Clean Water Act. Behind me today is Diane Cameron, an environmental engineer at NRDC to answer any technical questions about stormwater.

We agree that significant progress has been made in the past 20 years in reducing pollution from municipal sources, yet municipal pollution does remain among the most daunting challenges facing Federal, State and local water quality officials at a time when fiscal resources are increasingly scarce.

I'd like to begin by supporting increased Clean Water Act funding both for SRF and for State, Federal and Tribal water quality operating programs. I believe the public will support this spending.

According to a 1992 Roper Poll, water pollution topped the list of the most serious environmental problems experienced by the American public, with 77 percent of respondents agreeing that water pollution is a severe problem and 79 believing that our current water pollution programs do not go far enough to solve these problems. If more Federal dollars are spent on water pollution control, the public must be assured that it's getting more environmental protection, not less, for its money.

Included in our testimony are two ways that we can make sure that our Federal dollars are spent more wisely and more efficiently. The first is least cost water planning. Simply put, water conservation is dollar conservation. Many of the capital and operating costs of wastewater collection and treatment are closely related to the amount of water flowing through the system. If it's cheaper to save water than to supply it at the front end or to save it at the back end, that's a wiser Federal investment than building new treatment capacity and new supply capacity. That ought to be considered in the mix.

Second is targeting funding to the National Estuary Program and similar watershed management-based programs around the country. Our written testimony addresses some of the problems with NEP. Senate Bill 815, introduced by Senators Lieberman, Dodd, Moynihan and D'Amato, would increase NEP funding contingent on the resolution of many of these problems, but the basic approach is to try to target more money to projects that are identified in sound watershed management plans so long as there is assurance that those programs are implemented.

For similar reasons, it is critical for us to seek solutions to stormwater and CSO problems that are cost effective but without turning our backs on the severe human health and environmental problems caused by those releases.

For those reasons, NRDC and other environmental groups worked closely with AMSA, ASWIPCA, and the National League of Cities last year to negotiate a rational framework for resolving CSO problems in a cost-effective way, and were extremely pleased to see that framework is included by reference in Senate Bill 1114.

With due respect, however, we were disappointed to read that the approach to stormwater control in Senate Bill 1114 undercuts rather than supports ongoing efforts to negotiate a rational, cost effective solution to stormwater pollution around the country.

We have quite a detailed recitation of stormwater problems around the country in our written testimony. I'd like to summarize the four most salient points.

I think the largest point of disagreement we would have with the National League of Cities is that stormwater pollution problems have been well-documented around the country over the years. I think members of this committee, including Senator Chafee, recognized in 1987 that stormwater is a severe problem.

Studies conducted by NRDC in cities around the country found that total pollutant loadings from urban stormwater rivals and in many cases exceeds loadings from factories and sewage treatment

plants. According to EPA's 1992 "Study of Urban Stormwater Discharges", while urban population areas make up only 2.5 percent of our land area, they contributed to 18 percent of the impaired river miles, 34 percent of the impaired lake acres and 62 percent of the impaired estuarine miles identified under section 319(a) of the Clean Water Act. Clearly, urban stormwater runoff is a major source of pollution for U.S. waters.

The distinguished Mayor talked about delays in the program over the past 3 years. I would refer you to page 22 of our testimony which documents the continuous delays in the Stormwater Program since 1972. The delays have been requested again, and again, and again, and the time has come for a rational, cost effective solution to stormwater problems that doesn't turn our backs on urban water quality around the country.

We do not believe that Senate 1114 addresses those problems. It would exempt most cities under 100,000 from the Stormwater Program. I'd like to emphasize that I'm not talking only about small, rural communities. We are talking about the largest growing suburban areas—the suburbs of New York, Philadelphia, Cleveland, Detroit, Cincinnati, Los Angeles. These are the largest growth areas in the country. They are the areas where we have the most bang for the buck in terms of investing in stormwater control programs.

EPA's data show that it is far cheaper to address stormwater pollution at the front end than to wait until after development has occurred and then face the serious costs and the serious flood and water quality problems that occur due to stormwater.

We would ask you to reconsider Section 402 of Senate 1114. Give us the opportunity to work with the cities on stormwater as we have on combined sewer overflows and to try to work out a reasonable approach, a cost-effective approach that does not send the message that we are willing to write off water quality in urban areas around the country.

Thank you.

Senator BAUCUS. Thank you very much, Mr. Adler.

Ms. Prothro?

STATEMENT OF MARTHA PROTHRO, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY, ACCOMPANIED BY MICHAEL COOK, DIRECTOR, OFFICE OF WASTEWATER ENFORCEMENT AND COMPLIANCE

Ms. PROTHRO. Good morning, Mr. Chairman, members of the subcommittee.

I'm Martha Prothro, Acting Assistant Administrator for the Office of Water at EPA. With me today is Michael Cook, Director of our Office of Wastewater Enforcement and Compliance. He is an expert on municipal wastewater issues.

Since last week when Administrator Browner testified before the subcommittee, we've had a chance to look at Senate Bill S. 1114 more carefully and we wish to express our general support for the direction of the bill and many of the detailed provisions. While we have a few differences with the bill, we're very optimistic that this can be the vehicle for reauthorization that the administration can

support. I'm just going to summarize briefly some of the specific positions that we are able to relay to you today.

First, with regard to the SRF, the administration supports a strong Federal commitment to capitalization of the SRFs. However, the President's long-term vision is for \$2 billion per year from 1995 through 1998 and this is \$5 billion less than the bill authorizes over the four-year period.

We do support lifting the restriction on sewer project funding so that CSOs and stormwater projects can be more readily funded. We also are considering the merits of allowing SRF funding for water use efficiency, water conservation and pollution prevention. We think these are good ideas.

We support the principal purpose test to restrict eligibility to those projects intended for water quality improvement. We're very interested in the idea of expanding State priority lists to include nontraditional projects such as nonpoint source and stormwater management so it is more likely these projects would be funded.

We're very concerned about the plight of disadvantaged communities that have had disproportionately high per capita wastewater treatment costs. As you know, we've proposed in the short term a \$100 million program in fiscal year 1994 for cities with high needs and user fees. Boston would qualify on this basis.

The President has also requested for fiscal years 1994 through 1997 more than \$2.4 billion in grants and \$3.9 billion in loans for rural communities as part of the Rural Development Administration's program for wastewater treatment. We're examining whether further Federal assistance would be appropriate.

EPA is concerned, however, about the total amount of set-asides allowed in S. 1114 and the long-term effect of these set-asides on the revolving nature of the SRF.

Finally, with regard to the SRF, we agree that the allotment formula does need to be updated. We believe it should be done in a legislative context.

With regard to permit fees, we support the establishment of a permit fee program, perhaps modeled on the Clean Air Act to help both the States and the EPA defray the costs of permit issuance, enforcement, monitoring and related program activities.

With regard to combined sewer overflows (CSO), we expect to publish our final CSO policy in October of this year, culminating many months of negotiation and public comment. The proposed CSO policy received widespread public support and we believe legislation on this subject will be unnecessary once the policy is final. In fact, we plan to move quickly now to implement the policy without awaiting legislative direction on CSOs.

With regard to stormwater, we would likewise like to proceed with implementing Phase I of the Stormwater Program without a loss in momentum. However, we do recognize the difficulty cities face in implementing their local programs and we believe a delay in applying the numeric water quality standards would be reasonable. We would also support authorization for cities to issue NPDES permits to dischargers to their storm sewers where they are willing and able to do so.

We believe the Phase II stormwater sources generally should be handled under a strengthened nonpoint source program, except

perhaps in urbanized areas. We'd like to work with you further on that.

That concludes my abbreviated summary statement.

Senator BAUCUS. Thank you very much, Ms. Prothro.

I'd like to focus a little bit on stormwater if I could and Mr. Adler, first with respect to communities under 100,000, does the environmental community think there should be some relaxation for the requirement for permits for stormwater discharge for communities under 100,000 or not?

Mr. ADLER. We think the program needs to be revised so that it works better. That doesn't necessarily mean that you exempt cities under 100,000 from permits. We would like to talk about things like general permits for cities under 100,000. I went to the National Flood and Stormwater Management Agency Conference in Sacramento in December and the problems that I heard were with the permit application process where they were spending a large amount of money to go to consulting firms simply to fill out the paperwork.

Now that we have experience with the Stormwater Program from the larger cities, let's talk about a general permit for smaller cities so that they can spend their limited dollars on the ground controls rather than paperwork.

Senator BAUCUS. What about that, Mr. Fraser? Is it more paperwork, but no relaxation in permit process as long as it's a general permit?

Mayor FRASER. My understanding is the paperwork problem has been formidable. I understood that the proposed legislation does apply to smaller communities if they are part of an urban area. I didn't see that there was a wholesale exemption of the communities under 100,000 but I may be reading the Act inappropriately.

Senator BAUCUS. Is there some agreement on the degree to which permits are required for communities under 100,000? That is what I'm trying to determine, or is that just an irresolvable issue at this point?

Mr. ADLER. Perhaps we should talk about density rather than population size. The National Urban Runoff Program found that all areas with a density of approximately 640 persons per square mile, which is roughly one person per acre, were similar in their stormwater impacts. Small cities with a low density perhaps could get a break from the Stormwater Program, but what disturbed us about EPA's implementation of Phase I and S. 1114 as we read it is that geographically contiguous, densely populated areas, which form the rapidly growing suburbs of the major cities in the country will continue to be exempt from the Stormwater Program. These are precisely the areas that are in most need of stormwater control.

Senator BAUCUS. Let's move to those communities above 100,000. The bill essentially relaxes the water quality standards and discharge for five year periods but in their place requires best management practices. Is that a provision that you and the conservation community can agree with?

Mr. ADLER. We don't agree with the bill in three principal respects. One is the exemption of cities below 100,000, especially the contiguous communities. Two is relaxation of the substantive re-

quirements for stormwater that rely on the CZMA guidelines which are good in principle but lacking in substance, lacking in firm, enforceable, accountable requirements to ensure that Philadelphia does approximately the same thing as New York city does for their stormwater.

We agree that there ought to be flexibility in stormwater programs. Each city is different, but there ought to be some substantive accountability so that the public has the assurance that if they are spending money on stormwater control, they are getting their money's worth. That's the second major area.

Senator BAUCUS. Mr. Fraser, you say the cities need a little help, what's your answer to Mr. Adler?

Mayor FRASER. Our main interest has been to get rid of the numerical requirements. I think that's the most important issue from our perspective.

Exemption for the smaller communities we thought made sense, but I'd have to confess to you that my reading of the bill is probably not—

Senator BAUCUS. What about the water quality standards at discharge during the two five-year permit periods and substituting best management practices in the interim? Is that needed from the cities point of view?

Mayor FRASER. I'm a little hesitant to speak for the smaller cities.

Senator BAUCUS. I'm talking about the larger cities now, those over 100,000.

Mayor FRASER. Those over 100,000, as long as we get rid of the numerical discharge requirements, those are postponed I think for 10 years, we're okay.

Mr. ADLER. We're willing to talk about the numeric, end-of-pipe effluent limits if they are replaced with something meaningful. Right now, the CZMA guidelines do not provide us with anything meaningful that assures us that sound programs are in place.

Senator BAUCUS. One final round of question although my time has expired and I'll be leaving.

Ms. Prothro, your statement was a bit vague on support to small communities. Does EPA support forgiveness of some amount of loans for needy communities or grant assistance or what?

Ms. PROTHRO. The Administration is continuing to examine the possible approaches for needy cities. For small communities, however, the request that the President made for additional funding for both grants and loans from the Rural Development Administration is the answer, we believe, for the long term. There is a considerable increase there for communities that are in rural areas below 10,000 and SRF assistance does provide considerable subsidy in and of itself. Given that it can be provided at zero percent interest, it is in essence a 40 percent grant subsidy over a long term.

Senator BAUCUS. I'd just encourage the administration to look, not only at Boston, but also at smaller communities. They are both needy. It is true the Boston Harbor is needy, there is no doubt about that but Boston itself is needy, but it is also true there are small communities that are equally stressed. I encourage the administration to work with the Congress to find a solution to that problem as well.

Senator Chafee?

Senator CHAFEE. Mr. Chairman, I note that two of our colleagues have joined us, Senator Kempthorne and Senator Durenberger. If they have statements, now would be a good time. I know that Senator Durenberger wants to greet his fellow Minnesotan.

**OPENING STATEMENT OF HON. DAVE DURENBERGER, U.S.
SENATOR FROM THE STATE OF MINNESOTA**

Senator DURENBERGER. Thank you very much.

I express to you and the Chairman my regrets on not being here earlier, and to the members of the panel as well. We were marking up the clinic access bill.

When I think back to the last reauthorization of the Clean Water Act, the one we completed in 1987, the issues that I recall most clearly are the formula for the SRF grants, nonpoint source pollution, and stormwater permits. While reviewing the materials for this hearing, I can see that participation in the last reauthorization will prove beneficial as we work on this new bill. The issues are still the same.

S. 1114 would substantially reduce the portion of SRF dollars that get allocated to my State of Minnesota. All of the States of the Great Lakes region, with the exception of New York, would be losers. Hundreds of millions of dollars now allocated to water quality projects in the Great Lakes would be redirected to other regions of the country. Mr. Chairman, these are the same points I made when the clean water bill was last reported out of this committee.

I called the SRF formula in the bill reported by the committee in 1985, the moral equivalent of the lamprey eel. That bill brought a filibuster on the floor from other Great Lakes Senators and it was uniformly opposed by House members in the conference and completely overturned and the conference restored with the minor modifications. The formula was written in 1981.

One can draw some lessons, I hope, from that experience. No one will deny that the distribution of the dollars among the States would change as needs change but formula changes that have no foundation in policy are likely to fail. The SRF formula proposed by this committee in 1985 was nothing more than a blatant grab for bucks with no policy justification.

For instance, I recall that one of the factors in that formula was the inverse of the cube root of some obscure EPA statistic. Formulas like that will just not pass for policy.

I'd like to work with the leadership on this committee and I compliment both the Chair and the ranking member as strongly as I can for their work in getting this bill before us. I'd like to work with you to assure that the distribution of SRF dollars is fair and justified in all cases by good policy considerations.

I will recognize the need for change but I also expect that changes that reduce the money coming into my region of this country will only occur if they are going to meet more pressing water quality problems elsewhere.

Senator Chafee [assuming Chair]. Senator Kempthorne, did you have statement?

Senator KEMPTHORNE. Mr. Chairman, this is a very, very important issue that we will be dealing with and so I too have questions that I will be posing to the members of the panel and would just note that I was a bit late because of conflict of schedule with the Armed Services hearing. I'd note that there is a Senate Reform Committee that has been taking testimony on suggested reform and I intended to appear and testify on the frustrations of conflict of schedule, but I had a conflict of schedule.

Senator CHAFEE. I must say it's very nice having Senator Kempthorne on this committee because, as everyone knows, he has dealt with these problems firsthand as a Mayor of a large city, so we are delighted to have your expertise here.

Let me ask the panel about Davis-Bacon. As you know, any time the Federal Government provides monies we impose mandates that require adherence to the Davis-Bacon Act which means paying salaries at the so-called prevailing wage which, in nearly all instances, is considerably higher than otherwise.

Mr. Smith, in his testimony suggests we repeal Davis-Bacon mandates so that we can get more accomplished with the same dollars. How do you feel about this, Mayor Fraser?

Mayor FRASER. Our organization has favored the repeal of that Act.

Senator CHAFEE. Mr. Adler, I suppose you're not involved in this?

Mr. ADLER. That's correct.

Senator CHAFEE. Mr. Wagner?

Mr. WAGNER. Speaking for AMSA, we don't have a position on that subject, Senator, so I can't really respond. However, coming from New York, I would offer the opinion that there are many other restrictions and requirements in the SRF program that we think should be looked at as well that are onerous and really preventing people from getting these loans in an expeditious way.

Senator CHAFEE. Ms. Prothro?

Ms. PROTHRO. We have not supported a change in the general applicability of Davis-Bacon, but we have been looking at whether or not it would be appropriate to provide some kind of an exemption for smaller communities. So we'd like to work with you on that.

Senator CHAFEE. Mr. Adler, back to this subject of stormwater and the permits that would be required. Here is the situation as we looked at it. You devoted a lot of attention to stormwater. If that were the only question, we might well agree with you but here is the situation. We've got a whole series of unresolved water quality problems—nonpoint pollution from farm runoff, wetlands protection, combined sewer overflows, habitat loss, discharge of pollutants that bioaccumulate in the food chain.

When you look at the water quality problems, stormwater wouldn't seem to be the highest priority. The problem, under what you're suggesting, is the reallocation of efforts under the Act and resources likewise. Let me give you a little illustration and Mayor Fraser has addressed this.

It's my understanding that it cost 180 cities under this \$140 million just to prepare their applications. We thought that is a lot of money. That is the paperwork matter that the Mayor and Ms. Prothro were addressing. It seemed to me that the approach we

took was a better one, particularly for the smaller cities under 100,000 and they follow a plan.

It isn't that they are let off scott free but they come forth and they say what they are going to do—they are going to sweep their streets x times a year; they are going to make these various efforts—and that's the way we approached the thing. Yet you would have these permits, whether they are general permits or specific permits, it's a whale of a paperwork problem.

Mr. ADLER. If I may disagree with your first point and agree with your second point, we disagree that stormwater is not a priority problem. Again, I'll refer to EPA's data—these are not our data—that 2.5 percent of the land area, 18 percent of the impaired river miles, 34 percent of the impaired lake acres, 62 percent of impaired estuarine areas are identified under the nonpoint source assessment. So nonpoint source pollution polluted runoff is a major remaining water quality problem but polluted urban runoff is a large percentage of that pollution and we need to address that if we are to restore the health of our urban waters, lakes and estuaries around the country.

I do agree with you that we should not be spending more limited resources on paperwork than on-the-ground control, which is why we propose we look at things like general permits for smaller cities or countywide permits for areas so that you don't have 50 smaller communities apply for separate permits rather than a countywide permit, taking advantage of economies of scale to address the problem.

So let's figure out a way to address the problem cost effectively but not turn our back on the problem altogether.

Senator CHAFEE. We wouldn't think we were turning our back on the problem.

Another thing that bothers me about all of this, and we talk about it, but I'm not sure we do much about it. Mayor Fraser, maybe you can say something about it. Is any innovation being undertaken in connection with solving these problems? You're always talking such big dollars that no one dares branch off and try something new because if it doesn't work, you've sunk a lot of money into a failure. Are you familiar with innovative steps that are being taken in handling any of these problems?

Mayor FRASER. Senator, I'm not technically up-to-date. I don't follow some of the efforts that cities have made to deal with this problem. I wanted to note in connection with what you were saying earlier, since I've been Mayor for over a decade, we've faced recurrent financial crunches and there has been the need to cut spending.

One of the things we did is we cut street sweeping. We used to sweep our streets three times a year in our city. We went down to two because it was one of the places we could save money. Our estimate is it is going to cost us a couple of million a year just to comply now with the kinds of efforts that will be needed to address the stormwater run off.

Our view generally is that we don't think we know enough yet about what will really work. That's one reason we want to move a little more carefully here.

Senator CHAFEE. My time is up and I'll get back to you with that same question, Ms. Prothro.

Senator Kempthorne?

Senator KEMPTHORNE. Mr. Chairman, thank you very much.

Mayor Fraser, if we could continue the conversation with you, you've indicated that the stormwater is not the highest priority in this clean water issue. Have you, in your own city, or has the National League of Cities come up with how they would prioritize the issues themselves within the Clean Water Act?

Mayor FRASER. I'd like to say that we have but the fact of the matter is that when I speak for the organization on this, I come to it not having the depth of expertise that some of the other members do or some of our staff do.

Part of what we're looking at is the continued addition of Federal mandates that are making us do things-and whether it's the ADA Act or dealing now with the problems of lead in water, or upgrading sanitary landfills or financing the cleanup of toxic waste sites, we're getting hit every time we turn around and that's one of our biggest problems. That's one of our concerns with the stormwater issue. It's partly a question that as we talk about cleaning up the environment we have a lot of things to look at, and we are looking at a lot of them. We're just not sure the stormwater issue rises to the top of priorities. There are just too many other problems we're looking at.

Let me add that my own city, Minneapolis, and St. Paul are one of a dozen cities around the world that have joined in a CO₂ reduction project. We are engaging in extensive planning on ways to reduce the emissions of carbon dioxide into the air.

So it is not that we are not environmentally conscious, we are enormously conscious of it but our dollar problem is getting worse every year. I see the administration saying, well, don't put so much money into this, but the problem is more of it comes out of our pockets.

The real difficulty is we're having to charge people without any reference to ability to pay. Our combined water, sewer and solid waste is running almost half of the average property tax bill now. These are direct charges, so that a person who is in poverty pays the same amount as somebody who is very wealthy. So the whole thing is not working well. We are very sensitive to these added costs.

Senator KEMPTHORNE. How would you characterize the extent of the problem of unfunded Federal mandates?

Mayor FRASER. A very large problem and growing every year. Nobody thinks local government spends money very efficiently and I've been wrestling with that problem for a decade and I keep looking at other levels of government and figure we are doing pretty well.

Senator CHAFEE. Don't look at us.

Mayor FRASER. Right.

[Laughter.]

Mayor FRASER. Our fiscal problems every year are getting tougher. Our police department wants to add more cops now because we're not doing very well for families and kids in this country, so I

don't know whether we should have more cops or be treating stormwater runoff.

Senator KEMPTHORNE. Can you make a case that there may be instances where you do not provide for the level of police protection because you are meeting a Federal mandate?

Mayor FRASER. Oh, yes. It's a balancing act and we have a wide range of local responsibilities, and we are unable to deficit finance.

Senator KEMPTHORNE. Don't ever start.

Let me ask other members of the panel, just to help me to determine, what should be the priority, if it's not stormwater? What should be the priority as we consider the Clean Water Act? Mr. Wagner?

Mr. WAGNER. I'd like to jump to the mike on this issue because AMSA has been a strong proponent for a while now of comprehensive watershed planning. I think that is the message we'd like to bring here. We're very pleased to see in S. 1114 the beginnings of a framework that would allow planning comprehensively.

The reality is that not every water body suffers from the same problems and those that have similar problems are not there to the same degree in every case. What the comprehensive watershed approach would do is to assess that and if in fact there is a watershed where stormwater is the greatest problem, then that should be attacked first. If there is a watershed where it's the least of the problems or is not a problem, then it need not be addressed or could wait on the back burner for an extended period of time.

Senator KEMPTHORNE. So you believe the key should be the comprehensive watershed planning?

Mr. WAGNER. Absolutely, yes. We'd like to work with the committee to even strengthen S. 1114 further in that regard.

Senator KEMPTHORNE. All right. I appreciate that.

Anyone else? Mr. Smith?

Mr. SMITH. Senator Kempthorne, I would agree in essence with what Mr. Wagner just mentioned. Comprehensive watershed management planning is a mechanism by which to help establish those priorities that can vary greatly from watershed to watershed and cannot on a national scale, let alone on a State scale, identify one problem as predominating or having higher priority. That is not the only mechanism by which that can be done.

States are currently involved in a regular evaluation and monitoring process wherein the Congress, under Section 305(b) of the Clean Water Act, instream monitoring is getting more and more recognition as a means to determine not only where there are problems but where the resources are nationally.

Senator KEMPTHORNE. My time has expired. Mr. Chairman, thank you very much.

Senator CHAFEE. Senator Durenberger, Senator Wofford has a time problem and if he could just give his statement and ask a couple of questions?

Senator WOFFORD. Mr. Chairman, I'm delighted we're holding this series of hearings and I'm very sorry that inescapable obligations cut in at both ends and I'm just here to pay my respects to this panel whose testimony I will read and my old friend, the excellent Mayor, Don Fraser, and to thank you also for inviting Paul Marchetti from Pennvest, our State Infrastructure Investment Au-

thority. It was started by Governor Casey while I was in his cabinet and I saw it grow and I saw it dramatically improve water quality throughout the State and draw on the Federal-State Revolving Loan Fund Program.

I commend to you Mr. Marchetti's specific suggestions for what we can do. I've read them, I agree with them, and I'm just very sorry that I can't be here for more of this very vital hearing. I've read a good part of the testimony and we're on the right track.

Thank you.

Senator CHAFEE. Thank you.

Senator Durenberger?

Senator DURENBERGER. Thank you, Mr. Chairman.

Don, I want to welcome you and everybody else. Most of the witnesses are people or organizations with which we are very familiar and very grateful.

Let me begin by endorsing Don Fraser's comments which does not need to be done these days. I think the President of the League of Cities is just the latest in a series of honors, if you will, although I don't know that he looks at it that way when he undertakes the tasks that have come Don Fraser's way over many years of public service.

Don, you probably don't know but I spent a good part of Saturday riding around in a police car in south Minneapolis and I must say, it's a revelation and an endorsement of what you've said about the difficulties of being a Mayor, but also says something about the difference in the way you can govern at the local level and how difficult it is to balance, and how dependent you are on the judgment of people that are a part of city government. You don't see that at other levels of government as you do when you have to run a city.

I know you take a lot of heat for things, those of you who are mayors, and other people at the city level, but I must say, when I look at the problems with which communities are faced in this country, I don't envy you your position at all.

You've also been a member of an organization called the CSO Partnership. Minneapolis has difficult and expensive combined sewer problems, along with other cities, that are members of that partnership. I wonder where the partnership is right now on CSO policy that EPA has put out? Does Minneapolis, the partnership, or the League still have problems?

Mayor FRASER. I think we feel very comfortable with the direction we're moving in with the CSO and the 15-year permit. In Minneapolis, we are about 95 percent separated. We have another \$34 million of expenditures ahead of us. We think that issue is moving well.

Senator DURENBERGER. I'd like to know what you think about sewer rates compared to the cost of other municipal services. How much, for example, does the average Minneapolis family pay for sewer services? Do you receive a lot of complaints when you have to raise rates?

Mayor FRASER. I don't have that broken out separately from water because we bill them together. We bill the sewer rates based on winter water consumption so in the summertime they are using water to water the lawns and so on, we don't end up charging them for sewer use.

I can just say those rates are going up steadily. The combined water, sewer, solid waste collections are running close to \$50 a month and that's about half the average property tax bill of a homeowner in the city. Our city's family income has not kept pace with the metropolitan income. We're experiencing a steady growth of poverty in our city.

The problem with these kinds of charges is that they take no account of how able or unable someone is to pay them. It's not a very good way to finance government but we are forced to do it because we don't have any other choices.

Senator DURENBERGER. Is there an awareness level on the part of the consumer?

Mayor FRASER. Yes. It seems almost every year we're raising water rates, sewer rates and solid waste rates. We had been billing quarterly and we think we have to go monthly now because the bills are getting so large. There's quite a high level of consciousness but people, in a way, are accepting because they don't see a choice but it's becoming increasingly difficult for them.

Senator DURENBERGER. One of the observations that always amazes and interests me about peoples' view of Minnesota is that they see all the lakes and beautiful cities like Minneapolis that's got lake after lake after lake and all the greenways connecting it and nobody gives any thought that there is also some cost associated with protecting that kind of resource. Can you give us some idea of the cost of doing that in a city like Minneapolis?

Mayor FRASER. I don't know that I can give you an overall cost. As you know, perhaps better than others, one of the difficulties we've been experiencing with the beautiful lakes in our city has been the runoff into the lakes. The algae has been flourishing with the fertilizers from the lawns being sent into those lakes, so our park board has been trying to deal with that now for some time.

The one cost figure I can share with you is that we're estimating that our stormwater requirements will add several million dollars a year at the front end and they will continue to climb as we attempt to address the broader issue of stormwater runoff.

Senator DURENBERGER. Maybe I'll ask both Don Fraser and Mr. Wagner about the issue of permit fees. This bill is going to require cities to pay fees to the States to fund State programs. Industrial dischargers will also have to pay the fees. I'm just wondering whether AMSA and the League of Cities support those particular provisions in the bill?

Mr. WAGNER. AMSA does support those provisions. We've said for a while now that one of the problems with the Clean Water Program is inadequate resources at the State level to manage the program and to do the technical and scientific work for setting water quality standards on a rational and scientific basis. So we think this is a modest price that dischargers should pay to help support those programs to get a more rational system under which they are regulated.

Mayor FRASER. We're a little bit concerned about the fees. We are charging customers the cost of our systems in the city and then turn around and pay additional fees. That is an issue on which I don't feel I can speak in any detail. What I'd like to do is have our

staff be in touch with the subcommittee staff and work on that question.

Senator DURENBERGER. Thank you.

Senator CHAFEE. Thank you.

I was very interested in your testimony, Mr. Smith, in which you said about the State Revolving Loan Fund that, through that you could get projects done quicker and in half the time than a project which received a Federal grant. Do you stand by that statement?

Mr. SMITH. Yes, sir, we do. The time savings essentially comes in due to the fact that States are able to work more closely with communities in developing projects and determining which requirements of the Revolving Loan Fund apply and which don't. Under the Grants Program, all that work only got us up to the point of awarding a grant; there was no construction that followed that until after bids had been let in the community and initiated.

Under the State Revolving Loan Fund, most States award loans at the time of award of those bids, so there is a very small lag time between the time the loan is awarded and the project actually breaks ground.

Senator CHAFEE. I was going to ask you the last question, Ms. Prothro about innovation. Your agency has some innovative thoughts on how to handle all these problems?

Ms. PROTHRO. I think especially in the Stormwater Program, I think that was the original context of your question, we really would like to promote innovation. We don't think end-of-the pipe controls are going to be the answer in the long term for stormwater, although in some cases, it may be necessary.

I certainly agree with what Mayor Fraser said. We don't know exactly what's going to solve the water quality problems in all cases, although we know we do have water quality problems from stormwater. We think in some cities, for example, it's as simple as eliminating illegal connections to the storm sewers, making sure that domestic sanitary waste is not going into the storm sewers. In other cases, maybe the possibility of using pollution prevention approaches and management programs of that sort may prevent the pollution from getting into the storm sewers in the first place.

So we really do want to promote a lot of innovation in this area. That's one of the reasons, as I said in my oral testimony, that we think some delay in the application of the water quality standards' numeric limits might be appropriate and reasonable here while we work on this and don't unnecessarily rush to solutions that in the long term may be expensive and not as effective as a prevention-based approach.

Senator CHAFEE. One of the things that our bill contemplates is that instead of these permits being required for the smaller cities, that there would be a plan they would follow, perhaps street sweepers going twice a year. I must say I'm for that but at the same time, I don't think I've seen a street sweeper in the past 10 years. Do they still exist or have they gone the way of the horse collar, or do you know? Mayor? I remember those great things that looked like a tank that came down the street with brushes, and maybe I'm just not around when they are there but I'd be willing to give anybody a dollar that could show me a street sweeper in

the City of Washington. I suppose that wouldn't apply to you in the City of Minneapolis, Mr. Mayor?

Mayor FRASER. We'd collect your dollar in Minneapolis.

Senator CHAFEE. You would?

Mayor FRASER. Yes.

Senator CHAFEE. Are they at night? When do they function?

Mayor FRASER. We have sweepings now twice a year, one in the fall after the leaves have fallen because if the leaves get carried into the system, then they clog things up, so we attempt to clean the streets after the leaves have come off the trees and then we have usually winters with lots of snow and debris, so in the spring-time we also sweep a second time.

Senator CHAFEE. I must say it must be very hard with the number of automobiles we have parked along the curbs, so how can the street sweeper do his job?

Mayor FRASER. They are posted. We post signs and we do pieces of the city each day.

Mr. ADLER. Senator, if I could jump in. I don't want to minimize street sweeping's importance but I agree with what Ms. Prothro said about prevention over end of pipe treatment. We would view end of pipe treatment as the least preferable stormwater solution. We should begin with site design type of practices that minimize runoff to begin with.

I'd cite the example of Davis, California which led the way in the 1970s and 1980s with innovative site design practices as a way of preventing stormwater control and found that stormwater control saves money for the city in the long run. Flood control, where you have to build expensive capture, collection and then treatment systems is very expensive. That's why we believe we need to get the newly developing areas into the innovative, prevention-oriented stormwater programs before the development has occurred. It will cost us more to collect the flood water and to treat it later than to prevent it to begin with.

Senator CHAFEE. Okay, Mr. Adler.

Thank you all very much for coming. We appreciate it.

We'll now move to the next panel of four witnesses and if they'd come forth promptly.

This panel consists of Ms. Terry Agriss from New York State; Mr. Kenneth Bruzelius; Mr. Paul Marchetti; and Mr. Ronald Marino.

Ms. Agriss, you go first. I will say I will have to be quite stern about limiting you to five minutes. We are running short of time here and I want everyone to have their chance.

Ms. Agriss, why don't you proceed?

STATEMENT OF TERRY AGRISS, PRESIDENT, NEW YORK ENVIRONMENTAL FACILITIES CORPORATION, REPRESENTING THE COUNCIL OF INFRASTRUCTURE FINANCING AUTHORITIES

Ms. AGRISS. Thank you very much, Senator.

I appreciate the opportunity to appear before you today. My name is Terry Agriss. I'm the President of the New York State Environmental Facilities Corporation. I also have the privilege this

year to be the President of the Council of Infrastructure Financing Authorities and I'm testifying on their behalf today.

We are very pleased that the State revolving funds have been established in all 50 States and also Puerto Rico. As of June of 1992, over \$6 billion in grants had been received by the States for the State revolving funds. Including State match and the leveraging that we've been able to do as of June of last year, \$10.7 billion in loans had been made from State revolving funds throughout the country. That was on behalf of 1,363 projects at that time and we've been very busy ever since; we are updating that survey even as we speak.

One of the interesting things about the State revolving funds is they have been able to finance not only the sewage treatment facilities themselves, but we have been able to be creative in many instances so that we have been able to finance combined sewer overflow projects, stormwater control projects, and also nonpoint sources of a variety of kinds.

One of the things that we would strongly urge the committee is that with the reauthorization of the Clean Water Act that you remain flexible and that you allow the States to continue to be as creative as they have been, on the financing side and we would hope, as well, on the project facilities side.

The SRFs, we believe, are working very well, but we also believe that there is a significant need for continued funding and we appreciate the levels that are included in S. 1114. As you know, EPA estimates that over \$100 billion worth of projects still need to be constructed and completed and, in fact, we believe the current amounts of money that will be available through the SRFs are of great concern. The Administration, we believe, had intended for the SRFs to continue at \$2 billion a year and we are concerned that the number might be significantly smaller as we look into 1994.

One of the reasons for our concern is that we believe that the SRFs do have the ability, after they are fully funded, to indeed meet the needs that have been identified, notwithstanding the size of the need. In our analysis, we have looked at the funds continuing to be capitalized at \$2 billion a year. If we did that for the next 12 years, we believe the funds would be fully capitalized. At that \$2 billion a year level for 12 years, we would be able to finance more than \$133 billion worth of projects over the next 20 years. That's a significant amount of money; it's obviously well more than grants would ever be able to finance at similar levels.

In fact, what we see now is that many States have gone to leveraging. We expect that 60 percent of the monies in the SRFs throughout the country will be leveraged in a very short period of time and that can allow us to fund enormous numbers of projects.

Senator CHAFEE. Could you repeat that? What were your assumptions to get to your sums?

Ms. AGRISS. Yes. If the funds were to be capitalized at \$2 billion a year for the next 12 years—

Senator CHAFEE. By capitalized, you mean if the funds were to continue at the rate of \$2 billion a year?

Ms. AGRISS. That's correct.

Senator CHAFEE. Keep going.

Ms. AGRISS. That over the course of the next 20 years, we would be able to finance \$133 billion worth of projects so that would be looking at \$2 billion a year for the next 12 years or \$24 billion. But because of the revolving nature of the funds and our ability to leverage those funds, we would in fact be able to do \$133 billion worth of projects.

Senator CHAFEE. What is the next step between your 20 years and your 12 years?

Ms. AGRISS. What we're saying is that after 12 years, you would no longer need to continue capitalizing the funds.

Senator CHAFEE. Capitalize meaning?

Ms. AGRISS. Appropriating monies for them.

Senator CHAFEE. Why did you mention 20 then?

Ms. AGRISS. We're indicating that even after you stop appropriating money for the funds, because the funds revolve in the SRFs, we would continue to be able to finance projects and with their revolving nature and with leveraging, we would be able to do \$133 billion in project financing.

Senator CHAFEE. So with \$24 billion of Federal funds?

Ms. AGRISS. That's correct.

Senator CHAFEE. Over 12 years, you could stretch it out or keep it active for 20 years and you'd leverage to a total of 160?

Ms. AGRISS. \$133 billion. That's based on the State matching for the revolving fund plus the local communities putting some money in through loan repayment.

Ms. AGRISS. That includes the 20 percent State match, it also includes some modest assumptions on how much interest earnings would go into the funds. We've assumed that the funds would earn, on average, 1 percent a year on their monies and also that for loans that are made with the direct capital in the funds, they would receive a 2 percent interest rate on them.

We can give you the details. I'd be happy to provide them to the committee.

Senator CHAFEE. You've got this in your testimony, extrapolating the subsidy and so forth. I think you explain it pretty well.

Ms. AGRISS. There's a chart on the last page, I think that helps in giving all these numbers.

Senator CHAFEE. Fine.

You can have a little more time because I took your time.

Ms. AGRISS. Very briefly and to summarize my testimony, we do believe the SRFs provide very significant benefits. They do provide low interest to municipalities. Some people have indicated this is not quite as good as grants. We've done analyses that indicate, particularly for communities where many elements of their projects are not grant eligible, the loan program can in fact not only compete, but in fact, in many instances, surpass the benefits that a grant program at 55 percent would provide.

Just a couple of other numbers, not to confuse anybody, but the State revolving funds frequently are saving somewhere on the order of 2.5 percent of the interest rate, so instead of a 6.5 percent rate, the loans would be made at say 4 percent. For a \$10 million project using this kind of analysis, the savings to the municipality on the \$10 million project would be \$3.1 million over the full 20 years of the loan.

If you extrapolated those numbers to the total loan pool that we've made so far—the \$10.7 billion that had been loaned out as of last year—the savings are anticipated to be somewhere on the order of \$3.3 billion to the communities that had received those loans.

Briefly, I would like to note we are very pleased that in your bill, S. 1114, there is a provision for hardship communities. We believe that most people look at those hardship communities primarily as small communities. We feel very strongly that small communities can be benefited if they have financial hardship through what we call a principal subsidy. Rather than providing a direct grant to those communities, we believe the SRFs can be used creatively so that only interest earnings on the SRF funds would be used to provide what might be called principal writedowns to those small communities.

It has the effect of reducing the amount of money that a small community would have to repay to the State revolving loan fund but it also would keep the actual amount of money originally in the fund intact so that you don't diminish the value of the fund over time.

Senator CHAFEE. You've used up the bonus time I gave you.

Ms. AGRIS. It could have about 30 more seconds, I'd just like to note that for larger communities, we believe loan stretchouts beyond the 20 years are the appropriate way of dealing with hardship.

Finally, I would strongly suggest that technical assistance is enormously important, particularly for small communities. We applaud the committee's efforts and suggestions of how to provide financial and technical assistance.

We would look forward to working with the committee on how that might be refined and perhaps improved in order to not diminish the size of the funds.

Very finally, I would urge the committee to stress the need for coordinating with other Federal agencies. The SRFs can work closely with RDA. I believe Ms. Prothro's testimony, to the effect that there is a lot of money in RDA, should be looked at carefully in conjunction with the SRFs.

Thank you very much.

Senator CHAFEE. Thank you very much. We appreciate it.

I notice that Mr. Marchetti is on your board and he works with you on the subject.

Mr. Bruzelius is here and perhaps Senator Durenberger wanted to greet him.

STATEMENT OF KENNETH BRUZELIUS, PRESIDENT, RURAL COMMUNITY ASSISTANCE PROGRAM, NEW PRAGUE, MINNESOTA

Mr. BRUZELIUS. Good morning, Mr. Chairman and Senator Durenberger. I am pleased to be here to testify this morning.

My name is Ken Bruzelius. I'm the Executive Director of the Midwest Assistance Program in New Prague, Minnesota.

Senator CHAFEE. Where is New Prague?

Mr. BRUZELIUS. That is just south of the Twin Cities about 45 miles and has a great bed and breakfast, the Schumacher Hotel.

[Laughter.]

Mr. BRUZELIUS. A little PR.

The RCAP network includes national, regional, State and local offices serving all 50 States and Puerto Rico. Over the last 20 years, RCAP has provided on-site wastewater technical assistance to small rural communities. The communities assisted by RCAP are primarily very small communities with populations under 3,500. They are disadvantaged communities, often communities with minority or underserved populations.

For example, Newburg, a community in Missouri, with a population of 598 was issued an abatement order by the Missouri Department of Natural Resources as a result of longstanding documented problems at its wastewater treatment facility. The enforcement action required that Newburg take immediate action to resolve these problems without consideration of the costs to the residents.

The Midwest Assistance Program was able to work with the community of Newburg to provide an innovative, technical solution to the problem. Unfortunately, it is very difficult for States to accept innovative solutions. There does not seem to be a well-founded process for validating such solutions so that they can be accepted by the regulators and by the engineers.

As you know, more than 29 million Americans lack access to basic waste water treatment and disposal services. A study conducted by the North Carolina Rural Community Assistance Program found that nearly 250,000 residents of that State still use a privy, drain their raw sewage into streams, or lack running water. The same is true in many other States and it is reported that more than 80 percent of all communities in violation of sewage treatment requirements are in small, often rural communities.

A recent study by the Center for Community Change indicated that States find small community compliance problems with the following problems: the failing on-site septic systems, poor operation and maintenance, inadequate level of treatment, and excessive infiltration and inflow. Those responses confirm EPA needs survey findings of similar problems.

Senator CHAFEE. Mr. Bruzelius, you've got a long ways to go and you've got short time.

Mr. BRUZELIUS. And I'm going to move.

In fact, we would like to suggest to you some recommendations in terms of the legislation. I would like to thank Senator Baucus and Senator Chafee and this subcommittee for their willingness to avoid the one size fits all approach.

As I mentioned, RCAP works with small communities. We would recommend that States be required to set aside at least 15 percent of the total SRF each year for projects serving small, disadvantaged communities. States should be permitted to use SRF matching funds to provide grants for planning and design assistance and other up front costs to small systems whether or not they are successful in getting a loan. No one project should receive a loan from the State's SRF in an amount greater than 25 percent of the State's total SRF in a given year.

States should be permitted to extend low interest loan payments for perhaps up to 40 years for projects in small, disadvantaged communities, or find other means to subsidize the costs. In addition to

the technical assistance by States that is included which we strongly support, we believe there should be national third-party technical assistance available specifically targeted to communities with populations under 3,500 and to disadvantaged communities.

RCAP favors the repeal of easement of the Davis-Bacon, especially as it relates to contracting and construction in small rural communities. We have found that does in fact add to the cost of projects.

We certainly thank you for the opportunity of testifying and would be happy to work with the subcommittee in regards to items within our testimony and within the bill.

Thank you.

Senator DURENBERGER. Mr. Chairman, can I ask just one question of Mr. Bruzelius?

Senator CHAFEE. Sure.

Senator DURENBERGER. You talked about the compliment to the two main authors of this bill on getting away from one size fits all and that was an appropriate comment.

One of the things the bill does do in that regard is it opens up the SRF program to septic systems. Instead of having central sewers and POTWs, a city can go to a septic tank on site to manage protection of health and water quality. As I understand it, the city would bill the homeowners for that particular service and out of that repay the SRF loan. Could you tell us your perspective on that kind of option?

Mr. BRUZELIUS. We certainly support and believe that kind of option can work. However, we also believe that there are many rural communities that cannot effectively build sewer systems, even under the septic tank and alternative treatment methodology with just a loan, that some subsidy needs to be provided in many rural, low income communities to enable them to solve their problems and in other communities, where there is high groundwater, where there are other circumstances, they really need to be moving from the septic system to a more managed community wastewater treatment system.

Senator DURENBERGER. Your point is the cost of putting in a septic system at a certain level or size of community or economic status of the community or something like that is still too high so that it can't be paid back through some kind of fee?

Mr. BRUZELIUS. An example is the community of Garrison, Minnesota with which you are very familiar, I'm sure, where it is a resort community and yet the residents there are rather low income, many elderly people, and they have individual septic systems, but there is high groundwater, there is concern about Lake Mille Lacs, there are many problems basically the State is saying you need to take that discharge into a different watershed in order to protect the lake. Those types of situations become very expensive for the community, so there needs to be alternatives.

Senator DURENBERGER. That part, I understand, but where a septic system would be an acceptable alternative, is it still too costly in some communities?

Mr. BRUZELIUS. It really depends on where you can take the effluent from those septic systems. Just to have on-site treatment in

many areas doesn't work and in some cases where it does work, yes, I'd say a loan may help.

Senator DURENBERGER. Thank you, Mr. Chairman.

Senator CHAFEE. Mr. Marchetti who is Executive Director of the Pennsylvania Infrastructure Investment Authority in Harrisburg, Pennsylvania.

Mr. Marchetti?

STATEMENT OF PAUL MARCHETTI, EXECUTIVE DIRECTOR, PENNSYLVANIA INFRASTRUCTURE INVESTMENT AUTHORITY, HARRISBURG, PENNSYLVANIA

Mr. MARCHETTI. Thank you, Mr. Chairman.

Good morning. As you pointed out, my name is Paul Marchetti. I'm Executive Director of the Pennsylvania Infrastructure Investment Authority, otherwise known as PENNVEST.

What I'd like to do this morning is to briefly describe the PENNVEST program and also offer some comments on Senate Bill 1114 that I think the subcommittee might want to consider as this bill moves forward.

As Senator Wofford pointed out, PENNVEST was created in 1988 by Governor Casey in order to address a large number of drinking and waste water problems that existed at that time across the State of Pennsylvania. About a third of our sewer systems were under limitation bans, connection bans, and we led the Nation in the outbreak of waterborne diseases at that time.

Since PENNVEST was created with approximately \$1 billion in funding, three-quarters of which came from the State, and the balance of which came from the SRF Program, we have been able to fund approximately 650 drinking water and waste water projects across the Commonwealth with a total funding of slightly over \$1 billion.

In 1992, a referendum passed overwhelmingly in Pennsylvania that gave us an additional \$350 million in funding capacity and also gave us the ability to fund stormwater projects.

Most of our assistance is in the form of low interest loans. We average about 2.2 percent in our interest rates. We have about 5 percent of our assistance in the form of grants which we fund through State appropriations. The majority of our funding goes to larger systems, although approximately 30 percent goes to smaller systems which are defined as those with 1,000 connections or less. I should point out also that they constitute over half of the recipients of our loan and grant awards. Small systems also receive about 75 percent of our grant assistance.

Probably the primary characteristic of PENNVEST which is an attribute reflected in S. 1114 and that I commend the subcommittee for putting into this legislation is flexibility. We have a lot of flexibility in the State program, some of which is lacking in the SRF Program. I'm pleased to see that some of that flexibility is now being written into this legislation.

In terms of my comments on S. 1114, I'd like to express my pleasure to see that the loan-based approach that I think has been successful in Pennsylvania as well as other States in the SRF Program

has been maintained. I think that has been a very successful endeavor and I am glad to see that it continues.

Among the provisions I would like to comment on briefly in terms of funding, the needs and the SRF funding needs in Pennsylvania are over \$3 billion. If we got the funding that is proposed in this bill along with what we have received already, we would get approximately \$1 billion between 1989 and 2000. As I'm sure you hear from many States, we would like to see that funding increased if at all possible.

Second, as far as the principal writedown provision goes, as it is incorporated in this bill, I am in favor of that. I think it addresses the needs of many small and economically disadvantaged communities that have a very difficult time in meeting the user rates that are otherwise required to pay for these projects. I think the flexibility that the States would have to use a portion of the SRF as a principal writedown in order to provide some grant assistance to these communities would be very helpful.

Third, I support the inclusion of land costs as an eligible item. We now do that with our State program and I think it's entirely appropriate that be eligible under the SRF. As far as the leveraging provision proposed in this legislation, I would urge the committee to not require that. I think leveraging is a good idea, it certainly is true for Pennsylvania, but it's not necessarily true of every State. Leveraging, although it's advantageous, it does not increase the total capacity of the fund but rather moves some of that funding sooner into the present rather than having it available later. I think States should have the ability to decide when they want to time their SRF funding.

Finally, I would like to encourage the inclusion of an additional provision and that would be allowing extended term loans in cases where user rates are still very high. I think the 20-year restriction should be relaxed to perhaps 30 years or at least something coincidental with the design life of the facility being funded.

That concludes my comments. I'll be glad to take any questions.

Senator CHAFEE. Thank you, very much. That was good testimony.

I was interested in one comment you made in which you said, "Pennsylvania has the largest rural population in the country." I'm stunned at that.

Mr. MARCHETTI. So was I. I was surprised to hear that.

Senator CHAFEE. I'll give you another stunner. I was Governor when Bill Scranton was Governor of Pennsylvania and I remember him saying once that there are more deer killed on the roads in Pennsylvania than in any other State or maybe there are more deer in Pennsylvania than any other State in the Nation. Does that ring a bell?

Mr. MARCHETTI. That could very well be true.

Senator CHAFEE. It's a big State with a lot of rural and wooded areas.

Mr. Bruzelius, I've been pondering over your statement that 250,000 residents of the State of North Carolina lack indoor plumbing. I checked on the population of North Carolina. What do you think it is?

Mr. BRUZELIUS. I do not know, sir.

Senator CHAFEE. It's 6,037,000, so 250,000 residents without plumbing is 4 percent of the population. Do you think you're accurate?

Mr. BRUZELIUS. I believe so. The 1990 Census deals with sub-standard housing and one of the primary characteristics in the sub-standard data is lack of central water or sewer services.

Senator CHAFEE. And also your 50,000 households in Virginia seems high but that leads us into Mr. Marino.

[Laughter.]

STATEMENT OF RONALD MARINO, VICE PRESIDENT, PUBLIC FINANCE DIVISION, SMITH BARNEY, HARRIS, UPHAM & CO., INC., REPRESENTING THE PUBLIC SECURITIES ASSOCIATION

Mr. MARINO. Thank you, Mr. Chairman.

My name is Ron Marino and I'm a Vice President in the Public Finance Division of Smith Barney. I'm here today to testify on behalf of the Public Securities Association. While I'm doing that, I'll also try to distinguish my position from theirs.

I think basically what I am here to try to do today is look at some of the fundamental public policy and public finance issues. I'm certainly not an environmental systems analyst or an engineer, so I really don't know the technology but I can talk a little bit since I worked in New York City government for 8 years and public finance for the last 6 about some of the principles embodied in the legislation.

I think fundamentally, Senator, there is an intense competition growing throughout the United States over Federal aid. It's certainly not an insight, we know that. We know there is less Federal aid, more pressures on the State and in turn, more pressure on the counties, and in turn, more pressure on the cities to balance the various equities and interests that Mayor Fraser mentioned earlier.

Usually when you try to balance those interests and equities, infrastructure loses out. It certainly isn't chic, it's not sexy, and unless an intense storm hits Florida, then we quickly see our dependency on a strong infrastructure system or the bulkheads break in the City of Chicago and half of Chicago gets flooded, or a bridge collapses over the Mohawk River on the New York State Thruway, then we suddenly understand the importance of the infrastructure system.

Most basic I think is the Federal role in this. You've selected a very creative Federal role through the revolving loan fund. Revolving loan funds I think allow a State, and in turn the counties and localities, more flexibility in the grant programs. It's a self-insulated source of capital that will actually grow over time as the loan is repaid. It's a more efficient system. As Mr. Smith said, the loan program actually gets the construction started faster than the grant program. It's a vehicle to make feasible projects more feasible and unfeasible projects, because they can't meet the market requirements for capital, makes those projects feasible. It invests less public dollars as you go through the system of making more capital available.

Last, it gives more self-sufficiency and a more efficient decision-making process as we go through the system of allocating the priorities within a State, in a county and last to the city.

In 1987, we were told that there were \$83 billion of need just in this one area of wastewater and also competing needs in other infrastructure areas.

As Terry said in her testimony and Paul in his, while we can't meet that \$83 billion, what we do need is the basic legislative design to allow flexibility on the local level, to allow these two States, New York and Pennsylvania with very distinct programs, to aggressively leverage those dollars.

Some of the provisions in this bill tend to help that process as we move forward over the next 5 or 6 years. Allowing a loan term to be extended to the period of probable usefulness of the facility I think is quite important. Allowing land acquisition is also important.

I also understand in talking to some of the staff and in discussing with Senator Graham, that the Committee is also interested in trying to increase the velocity of the loan. How can we get this loan processed quicker and get the loan repayments back into this local bank that each State will create? Again, I think flexibility will be the key word here. You will need to look at various State models and allow, as the present legislation does, for this money to be used only for construction projects or in conjunction with construction or with the long-term takeout.

What you need to do is to look at the credit quality and the ability to pay of the counties and the localities. To mandate certain requirements would make it very difficult and indeed make the program unusable for counties of a low income nature or for counties that have a low credit quality. We need to assist those counties through some credit mechanisms. Indeed, it might sound counter intuitive that allowing for a principal writedown, actually lowers the cost for the entire financing because the rating agencies look at the weakest link. If you can help the weakest link, you will upgrade the overall number of projects and lower the cost of those projects being financed.

Senator CHAFEE. I'm not sure how you differ. You said you differed from Ms. Agriss.

Mr. MARINO. No, I wasn't differing. I said I was supporting what she was saying on that particular point.

Senator CHAFEE. Okay. Go ahead.

Mr. MARINO. A model you might look at in terms of the Federal mandates is the Intermodal Surface Transportation Efficiency Act where this committee also has jurisdiction over that legislation. In that model, in the revolving loan fund, when the loan is recycled and repaid, mandates are eliminated for Davis-Bacon for MBE, WBE, certain Federal construction requirements. That may be a way of incenting localities and States to use this money and then to be free from certain requirements. You want to eliminate all the vestiges of Title II.

Last, Mr. Chairman, let me say this because of your interest, I live in the City of New York in the Borough of Brooklyn about a mile-and-a-half south of the Brooklyn Bridge. The city actually has mechanical sweeping four times a week, two times on the north

side, two times on the south side, Monday, Thursday, Tuesday, Friday, and we use mechanical, GM and Mercedes-Benz.

Being a former city official, I'm sure we can arrange for a tour. If you're ever in the area, we'll get you down there.

The other thing is we actually had a program with 125 manual sweepers that would do the intense commercial areas of Manhattan and the boroughs but that's been eliminated due to the fiscal situation of the city.

Senator CHAFEE. Manual, you mean just pushing?

Mr. MARINO. Right, the guys with the brooms and the cans. Those guys were out there doing it.

Thank you, Senator, for the opportunity.

Senator CHAFEE. Thank you, very much.

Mr. Marino, as I understand your testimony, you are supportive but the only problem you had was some of the mandates that go along with the Federal program, correct?

Mr. MARINO. I think that's one area, Senator, that you want to provide flexibility and discretion. I think most States now have quite strict requirements for environmental, for MBWE & WBE, for local wage rates. You might want to utilize those State requirements rather than mandating Federal requirements. I think often we lose sight of the balance between the three levels of government. While it's important for the Federal interest, because you have money in this program and you do have an interest in it, I think at some point that interest terminates and you should allow the State, the county or the localities' rules and regulations and standards to be utilized.

Senator CHAFEE. What do you say about that, Mr. Marchetti?

Mr. MARCHETTI. I think I would have to support what Mr. Marino is saying. In Pennsylvania, we have a very extensive design process for sewer systems and review process. I think the States generally do a good job of ensuring that this program functions in a very efficient way. I think the States ought to maintain that flexibility to do that on their own.

Senator CHAFEE. What do you say, Mr. Bruzelius?

Mr. BRUZELIUS. I certainly agree that those requirements increase the cost of local projects and ways to take the Federal mandates off and make it more of a State or locality issue would help to fund more projects and get more bang for the bucks.

Senator CHAFEE. All right.

Senator Graham may have some questions; if so, he will submit them to you and you can respond for the record.

Senator Lautenberg has a statement he'd like included in the record.

[Senator Lautenberg's statement follows:]

STATEMENT OF HON. FRANK R. LAUTENBERG, U.S. SENATOR FROM THE
STATE OF NEW JERSEY

I welcome today's hearing to review issues that are critical to my State and its environment: sewage treatment funding and municipal pollution control.

We simply cannot achieve the goals of the Clean Water Act without adequate sewage treatment facilities. While we have provided over \$60 billion in Federal funds for these facilities, the remaining needs are monumental.

The state revolving loan program, which this Committee initiated in the last Clean Water Reauthorization, is making efficient use of limited Federal and state

funds for sewage treatment improvements. I support continuation of the funding for this program. And I am pleased that S. 1114 would increase the authorization for the state revolving loan program.

But with the large remaining needs, it's going to take more than Federal funding to get the job done. A few years ago, Senator Bradley and I introduced legislation to remove barriers to the privatization of sewage facilities. Last year, EPA announced that it would be developing an initiative to increase privatization.

I hope that our witnesses today can give us their views on the role privatization can play in meeting our sewage treatment needs.

One need which must be addressed is correction of combined sewer overflows. CSOs discharge raw sewage, industrial waste, and floatables, polluting our water, closing fishing grounds, and discharging garbage which winds up on our beaches. I'm pleased that the environmental community and the metropolitan sewage agencies have been able to negotiate a regulatory program for CSOs so we can get on with the job of reducing the impacts that CSOs have.

I hope we'll see this same spirit of cooperation as we address the contentious problem of storm water control.

Senator CHAFEE. Again, thank you all very, very much for coming. We appreciate it and it has been very helpful.

[Whereupon, at 12:15 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

STATEMENT OF HON. DONALD M. FRASER, MAYOR, CITY OF MINNEAPOLIS, MINNESOTA AND PRESIDENT NATIONAL LEAGUE OF CITIES

Mr. Chairman, members of the Subcommittee: I am Don Fraser, Mayor of Minneapolis and President of the National League of Cities. I am here today to testify on behalf of NLC and the 16,000 cities and towns across the nation we represent on S. 1114, the Water Pollution Prevention and Control Act of 1993.

For years, the nation's cities and towns have been your allies in securing enactment of national standards to protect our environment. The National League of Cities worked with you and supported reauthorization of the Clean Air Act Amendments of 1990; we rejected recent attempts to weaken the Safe Drinking Water Act; we worked with you in establishing the State Revolving Loan Fund and on Superfund.

For too long now the ability and capacity of local governments to absorb and implement unfunded mandates has been dismissed and ignored by both the federal and state governments. There are many municipalities that want you to rescind the overload of federal dictates. What that tells you in part is that municipal officials feels sufficiently impacted by the federal deficit that we are no longer sure that it is in our best interest to ask you to pay for what you mandate; the preference is that you just stop mandating.

But, what you must also understand, is that these same municipalities have reached the point where they are confronted with Hobson's choices: having to choose whether to provide safe drinking water to their citizens or public access to all handicapped individuals; whether to upgrade their sanitary landfills to meet new federal requirements or implement a federal mandate to control pollution from stormwater run-off; whether to provide lead-free public housing or finance clean-up of toxic waste sites—all of which, however worthy, are unfunded requirements imposed on municipalities by the federal government. The resources to pay for it all are simply not there.

Our financial constraints are different from yours not only in magnitude, but in the very limited access local governments have to sources of revenue. We are constrained by state law in what we can tax, when we can tax, and how much we can tax. Most municipalities have access only to limited portions of the most regressive taxes; few municipalities share in revenues generated by income taxes and even fewer are permitted to impose such a tax. And, unlike the federal government, we are prohibited from deficit spending.

We are pleased to note that our untenable circumstances have at last been recognized and that this committee's leadership—Senators Baucus and Chafee—has taken the critical first step toward restoring the governmental partnership that is essential if we are to accomplish effectively our mutual national environmental objectives.

The priority Clean Water Act issues for the nation's cities and towns are substantially addressed in your proposal:

- Clarification of Congressional intent and revisions of the *stormwater* management program;
- Revision of the requirements for addressing pollution from *Combined Sewer Overflows*; and
- A continuing *federal financial commitment* to assist in implementation of Clean Water Act requirements.

The other issue in which we have a vital interest is how you resolve the current conundrum on *wetlands* and we look forward to reviewing that proposal when it is completed.

STORMWATER

The stormwater program has been a major issue for the National League of Cities for over ten years. We have been to the Congress three times on this issue over the past several years and in succession, the Senate, this Committee and the House Public Works Committee have taken the initiative to delay implementation of the program for the nation's smaller cities and towns. It has been, and continues to be, unacceptable to local officials for the federal government to hold municipalities responsible to accomplish what no one knows how to do at a price that is absolutely unaffordable. The bill pending before you at long last begins to address the real issues facing municipalities in implementing a stormwater program.

What we believe has been poorly understood is that no one—not EPA, not the Congress, not the environmental community—has ever made a credible case to municipal officials that urban stormwater run-off is:

- first of all a priority problem of a magnitude deserving the investment of millions—if not billions—of scarce local dollars;
- second, an issue we can address effectively regardless of the resources invested; and
- third, the major contributor of what, in effect, is a non-point problem, to ongoing pollution in our rivers and streams.

For NLC, the bottom line on a stormwater amendment is no end-of-pipe requirements and S. 1114, at least for the foreseeable future, provides municipalities with that absolutely essential relief. The provision in your bill that imposes a ten year moratorium on numerical effluent limits and water quality standards, cannot be amended or deleted. *It is not negotiable.* You have taken an important step in the right direction, a step which will keep much of the municipal community as your allies in passing this measure.

It is also important for you to understand that while the provisions in S. 1114 are a vast improvement over where we are now, the new proposal is not without significant cost. Recent estimates by the American Public Works Association for the cost of level 1 BMPs, that is, the least costly strategies to control pollutants in urban run-off, is over \$1.1 billion a year. That represents an average cost of half a million dollars a year for the cities that will be required to implement a stormwater management program. And, the CZMA Guidance goes far beyond level one BMPs.

We would like to recommend several revisions to your stormwater proposal. First, we would like you to include a legislated role for local officials in the re-write of the CZMA Guidance and the development of any additional Best Management Practices as they apply to municipal stormwater programs. Local officials are, after all, on the "cutting edge" and the only repository of knowledge on this issue. The nation's larger cities are, and have been, struggling with this program. We have already invested significant local resources in stormwater management. Use this knowledge, build on it, learn from it. Don't allow the expenditure of scarce resources reinventing wheels we have already thrown away because they don't work. Such an addition to your bill would absolutely clarify that we are again partners, working together to solve mutual national problems!

Second, we would propose you dedicate some federal resources to finding the techniques that will accomplish the objectives of a stormwater management program. We must begin to develop the knowledge about what works and what doesn't work in controlling pollutants from stormwater, or we will be no further along ten years from now in knowing the appropriate approaches to stormwater run-off. While we have no specific policy on the matter, and are usually opposed to set-asides from the SRF, you might want to consider an amount off the top for grants to municipalities to test and assess new and innovative stormwater management strategies and programs.

We do not have the resources at the local level to invest in demonstrations that may or may not work. And right now, we have no idea whether BMPs or any other strategies will have any significant impact on the receiving streams. Certainly, we

have no information on whether numerical effluent limits are achievable, or what, if anything, will get us to water quality standards. It is unfair to ask the citizens of a given municipality to finance the research for what some perceive is a national problem or to risk local resources on a program that may provide no benefit. We cannot justify expenditures for experimentation to our local citizenry. That is a national responsibility. If you are serious about numerical effluent limits and water quality standards for stormwater run-off than there must be a program to finance the research, the trial and error, that will get us there, if such a feat is even possible.

We must take advantage of this ten year period to investigate how and whether these requirements can be met. We would think it is self-evident that a body of knowledge indicating whether a requirement is even feasible is essential before moving forward to implement such a requirement.

Our third recommendation is to ask you to include "municipal industrial facilities," within the system- or jurisdiction-wide permit. Under current EPA regulations municipally owned and operated "industrial" facilities such as sewage treatment plants, municipal garages, airports must file separate permit applications. We believe that if we are to be held responsible for pollutants in our stormwater run-off, we will certainly have to address all sources of pollutants over which we have direct control. By including municipal facilities in a city-wide permit, the same objective will be accomplished without the added expense of applying for additional permits.

STATE REVOLVING FUND

NLC recently re-examined and developed new policy on the concerns of local government in the financing of our national goals in attaining and maintaining the national commitment to clean water. The Baucus-Chafee measure is again a significant step in the right direction: a renewed federal investment in meeting Clean Water Act needs; provision for grants to distressed communities; and an expanded number of pollution control activities eligible for financial assistance.

We are most pleased to see your recognition that for some municipalities—those whose citizens are facing unrealistic cost increases in water and sewer bills—compliance with federal Clean Water Act requirements will be possible only if non-repayable sources of revenue are available. Allowing the states to use their matching share for grants should—particularly in states that are experiencing severe financial constraints—facilitate broader opportunities for local compliance. We are disappointed, however, that no portion of federal funds are made available for grant funding to municipalities.

We also support your grant provision's broad reach and the recognition that it is not only small communities that need grant assistance.

As currently drafted, my city would not qualify as a distressed community, but let me assure you we are only half a percentage point away. Water and sewer bills in Minneapolis are more than 50% of the average property tax liability.

NLC's policy also endorses expanding the activities eligible for federal financial assistance under the Clean Water Act. We also commend you for including septic systems as eligible activities for financial assistance.

I would, however, also reiterate our concern that some grant funds be made available for demonstration stormwater programs. Your bill proposes to deposit SRF funds that remain unobligated after two years to the federal treasury. While we recognize such funding might ultimately prove to be unavailable or hopelessly inadequate, you might consider redirecting unobligated balances to a stormwater demonstration program rather than the proposed reversion to the federal treasury.

COMBINED SEWER OVERFLOWS

NLC strongly supports the committee's ratification of EPA's proposed CSO guidance and your provision of authority to issue "long-term," that is, 15 year, permits. As you may know, NLC was part of the negotiation that developed the proposed guidance and although consensus was never achieved, we are generally satisfied with the guidance.

Mr. Chairman, Senator Chafee, you are to be commended for your efforts. While undoubtedly there will be some of my colleagues who will believe you have not gone far enough, we are thankful for your efforts to restore rationality to a process that was getting out of hand and for your recognition that we are partners in helping to attain our mutual environmental objectives.

I would like to request that NLC's Policy on the Clean Water Act be include for the record and to thank you for the opportunity to testify.

National League of Cities
Energy, Environment and Natural Resources
1993 National Municipal Policy

2.05 Water Quality And Supply

A. Problem

It is becoming increasingly apparent that no section of the country is immune to the problems associated with both natural and man-made water pollutants. Urban stormwater and construction runoff have long been recognized as major contributors to water quality problem, and in many older cities, the existing sewer system with deteriorating pipes may be one of the main causes of water pollution. The growing concern over the introduction of toxic chemicals and pesticides into the environment and their impact on the ground water have added a new dimension to existing problem.

New treatment plants are generating mountains of sludge to be disposed of, and serious questions about land application practices encouraged by federal legislation are being raised as the concern over heavy metals, organic chemicals, and pathogenic organism grows.

There is increasing evidence of organic contaminants, viruses, and other disease-causing organism in our nation's public water supplies.

Expanding industrial activity has resulted in the discharge of a wide variety of synthetic organic chemicals into the rivers from which a large number of cities draw their drinking water. In spite of increasingly stringent controls on water pollution, small amounts of these chemicals have still been widely detected in the treated drinking water of many cities. Several of these synthetic organic chemicals are known as possible carcinogens, although the exact extent of the public health hazard posed by quantities of those chemicals present in cities' drinking water is not fully known.

The limited availability of water in all parts of the country also appears to be a growing and difficult problem.

Individual cities and in some cases entire regional water basins are feeling the constraints of limited water supplies. In some places, constraints have become true shortages. New reservoirs or diversion projects can no longer be solely relied upon to solve the problem. The number of possible sites, the environmental disturbances, the financial costs, and the absolute supply of water severely limit these structural solutions. Nor can greater amounts of groundwater be relied upon. In some locales, ground water mining has led to exhaustion of supplies, diminished stream flow, and land subsidence, and salt water intrusion.

Water has not traditionally been subject to price-determined allocation. Instead, it has been distributed according to a complex mix of state laws, federal regulations and charges, and local rates. It is a haphazard system at best, one which nearly defies rational evaluation. For many projects federal funding and water rates are such that taxpayers subsidize projects, the benefits of which go disproportionately to a limited number of agricultural and industrial uses.

B. Goals

The basic principle for dealing with water pollution must be that no one has the right to pollute—that pollution continues because of technological limits, not because of any inherent right to use the nation's waterways for the purpose of disposing of wastes. However, the impracticability of immediately eliminating all pollution also must be recognized. A reasonable relationship of economic and social costs and benefits should be a necessary precondition toward achieving a nonpollution goal. The ability of municipalities to comply with any clean water program must be recognized as contingent upon adequate funds for building treatment facilities. In addition, any clean water goal must be applied on a uniform, national basis to prevent movement of industry in search of loosely enforced standards.

The nation's drinking water should be as safe as is technologically feasible at reasonable cost. Most Americans receive their drinking water from public water system owned and operated by local governments. It is thus imperative for the continued health and welfare of the nation that local governments have the financial resources and technical expertise needed to provide adequate and safe drinking water to their citizens.

C. Clean Water Act Policies

1. Federal Funding

Federal participation in the financing of projects mandated by the Clean Water Act is critical to the ultimate achievement of national water quality goals. The federal government must continue and expand its partnership with states and localities in the funding of Clean Water Act mandates. Federal contributions to the financing of water pollution control needs must be both substantial and a reliable long-term source of capital.

a. State Revolving Loan Fund

NTC continues to support the state revolving loan program (SRF) as a supplement to, not a substitute for, a grants program. The federal government should authorize an annual appropriation of funds which would be distributed to the states according to a specified formula. The states should then establish their own revolving loan programs for the distribution of loans, loan subsidies, or bond subsidies to localities for meeting Clean Water Act mandates. Such a supplementary program would help leverage federal funds, reduce annual local debt payments, and provide localities with added flexibility in structuring their Clean Water Act financing plans. Congress should prohibit states from using the interest on SRF loans to local governments to meet state matching requirements.

b. Grants

It is estimated that the nation's cities and towns face over \$200 billion in unfunded Clean Water Act mandates to comply with secondary treatment requirements and separation of combined sewer overflows. These cost estimates do not include implementation of separate stormwater management or wetlands protection or mitigation program.

NTC calls on Congress to restore grant funding to mist municipalities in progressing toward meeting the nation's clean water goals and objectives. Without such assistance it is unlikely that municipalities will be able to comply with federal clean water mandates.

c. Use of Funds

Federal funding for Clean Water Act purposes should be available to meet all Clean Water Act mandates imposed on municipalities including construction of wastewater treatment plants, interceptors and major appurtenances, infiltration/inflow correction, major sewer rehabilitations, repair, upgrading, collector sewers, combined sewer overflows, separate stormwater management program and wetlands mitigation projects.

Cities should be eligible for grant or loan funds or any combination of loans and grants to meet their water pollution control needs. Under no circumstances should any community be permitted to use grant funds for repayment of loans granted under the Clean Water Act.

The use of loans and/or grants should be tailored to the specific needs and capacity of each municipal applicant for federal financial assistance. Allocations of funds to municipalities should take into consideration a community's ability to pay and past local efforts to address the problem.

d. Sources of Funding

The federal government should redirect non-domestic spending priorities to assure adequate resources to meet Clean Water Act mandates. Congress should allocate a portion of these redirected resources to a fund dedicated to implementation of water quality requirements.

Under no circumstances should the federal government look to traditional local sources of revenues (e.g., a federal tax on water and sewer user charges, a federal tax on industrial dischargers to POTWs) to fund increased federal participation in financing Clean Water Act mandates.

e. Tax Code

Congress should remove current restrictions on the availability of federal tax incentives for private financing of wastewater treatment facility needs, since such financing arrangements may reduce capital costs and expedite project construction, upgrading, repair, rehabilitation, etc.

2. Compliance

To enable municipal compliance with federal secondary treatment requirements, Congress should restore adequate grant funding and assure full funding of the SRF. Additionally, state governments should provide increased assistance for construction of wastewater treatment facilities and localities should collect sufficient revenues through assessment of user fees to help pay for the needed construction.

3. Local Financing

Local governments should have the choice between the ad valorem property tax, metered user charges, and any other mechanism for recouping construction and operating costs. Federally mandated sewer user charges should be deductible from federal income tax.

4. Level of Treatment

The statutory requirement of "secondary treatment" should be defined as a desired level of water quality and not restricted to any one particular process. This desired treatment level required of municipalities should be defined to prevent expenditures for unnecessary and expensive facilities. Moreover, the least expensive solution should be favored, such as low flow augmentation, when such a solution is the most economically efficient solution.

5. Needs Survey

Cities should cooperate with their states and the EPA to develop a accurate and equitable needs estimate for the annual survey required by the Act. EPA must assure that project priority lists submitted by states give highest priority to projects in areas of greatest need, and assure the highest return in the amount of pollution controlled for each dollar of federal assistance expended. Attention should also be given to problem of small, rural communities.

6. Areawide Planning

Where wastewater treatment planning is on a areawide basis, local elected officials must have primary responsibility. Management agencies should be designated in response to the desires of local elected officials, and should assure a fair voice for each participating government on a one-man, one-vote, or weighted vote basis. Preference should be given to existing planning and management agencies where they have demonstrated expertise and capability. Each city should be designated a management agency, if so desired. River basins should continue to be basic units for the development and administration of water resources. River basins should be developed to assure the maximum benefits possible in both water supply and recreation to the communities they serve.

Areawide water quality management programs required under Section 208 must be assured adequate federal funding for implementation and continued planning and management. Funds must be made available for adequate technical assistance to aid in the transition from planning to actual implementation of plans.

7. Discharge Analysis

Any extensions of the deadline for compliance with secondary treatment standards should allow adequate time for individual analysis of current discharge practices. The analysis should focus on all relevant environmental effects including air quality, land use and energy efficiency. When evidence indicates that the technique utilized does not significantly degrade the environment, the facility should be exempted from additional treatment. The practice should continue to be monitored and if a unfavorable change is noted, additional treatment should be required.

8. Desalinization and Recycling

Government policies should encourage expanded use of desalinization processes and recycling of wastewater along with recovery of sludge and other resources material.

9. Beneficial Use of Sludge

Federal regulations on the management of municipal sewage sludge should encourage its beneficial reuse. Reasonably anticipated adverse effects associated with potential sewage sludge exposure and local geographical and climatic conditions must be considered in the safe disposal of sludge. If site specific consideration can be shown by reasonable risk assessment analysis to be environmentally sound, then the management practice should be permitted.

10. Sedimentation and Silting

Sedimentation and silting of lakes, creeks, estuaries, or other streams must be checked and avoided in all future planning. Whenever such silting and erosion has already occurred, research should be continued to find ways of correcting this condition, within an ecologically sound framework.

11. Research

EPA should support research on problems growing out of the management of wastewater treatment facilities such as combined sewer overflows, land application of treatment effluent and sludges, and source reduction.

Innovative and alternative technologies have not been used to their fullest potential. Therefore, federal research, development, and public education of these technologies should expand, but not at the expense of research on management and operational issues.

Source reduction technologies and programs are prohibitively expensive for individual municipalities to develop. For example, to enable municipalities to reduce levels of metals and other toxic pollutants from non-industrial sources, EPA should undertake research to identify products introduced by small business and residential generators and suggest control programs for reducing these pollutants.

12. Pretreatment

EPA should establish national categorical pretreatment standards only for those industries that it has classified as major polluters and only for those classes of toxic pollutants which are known to be widespread and which may be causing human health and aquatic life problems. EPA should be required to publish, by date specific, a listing of categories for which action will be required.

Local governments should be allowed to devise methods to satisfy national standards that not only assure protection of water quality but which are also cost effective under the conditions of their particular jurisdiction. Therefore, as an alternative to federally mandated implementation of the national categorical pretreatment standards, Congress should authorize states to approve local pollutant elimination programs.

To qualify for the alternative local program, a Publicly Owned Treatment Works (POTW) should be required to demonstrate to an authorized state agency that: 1) the POTW is in compliance with the requirements of its permit under the National Pollutant Discharge Elimination System (NPDES); 2) it has developed and implemented a local pollutant elimination program that in the aggregate is equivalent to implementation of the national categorical pretreatment standards; and 3) it is maintaining a local monitoring and reporting program which is adequate to disclose the quality of the receiving waters.

13. State Water Quality Standards

The current Clean Water Act requires states to designate how each water body is to be used within its jurisdiction and to develop standards for attaining that use. Under no circumstances should a state be allowed to downgrade or revise its water quality standards where the designated uses have already been attained. However, a state may revise its water quality standard if it can demonstrate that: 1) the existing designated use is unattainable because of irretrievable man-induced conditions; or 2) attainment of the designated use would result in substantial and widespread adverse economic and social impact.

Where the water quality of a stream exceeds the level necessary to maintain a designated use, a state should have the option to allow lower water quality for that stream because of necessary and justifiable economic or social development for which there is no feasible alternative. In no case should the degradation of water quality interim with or become injurious to existing instream use. Before a state exercises such an option, it should be required to hold public hearings and coordinate with all affected governmental agencies.

14. Toxicity Testing

NLC supports the use of Whole Effluent Toxicity Testing (WETT) for the assessment of the potential toxicity of wastewater discharges; however, legislation should be adopted to prohibit the use of such tests as "pass/fail" NPDES permit conditions imposing strict liability on POTWs.

15. Common Law

No municipality injured by a willful or negligent violation of federal or state law should be deprived of a remedy if one exists under the federal Water Pollution Con-

trol Act and other appropriate laws. However, EPA must be made a party where the defendant can demonstrate it has acted in good faith.

16. Pollution Prevention

In addition to treatment policies, the federal government should develop, advocate, and institute pollution prevention measures. Prevention strategies are more effective in keeping toxics out of wastewater and far less costly than end-of-pipe technologies. Products containing chemical levels which constitute a significant percentage of the total loading should be restricted as to their composition and/or use.

17. Separate Storm Sewer Requirements

NLC continues to support a more simplified and flexible approach to management of municipal stormwater run-off which would allow for orderly and cost effective development of both information and program design than that which exists under current EPA regulations.

Congress should amend the Clean Water Act to regulate urban stormwater run-off under a newly-enacted provision of the Act separate from the NPDES program. Such regulations should require implementation of Best Management Practices (BMPs) to the Maximum Extent Practicable (MEP) with a legislative prohibition on requirements for end-of-the-pipe treatment: Management of run-off from municipal industrial facilities should be incorporated as part of a system- or jurisdiction-wide stormwater management program. Municipal compliance with stormwater management requirements should be based on implementation of site-specific Best Management Practices required in the permit.

18. Combined Sewer Overflow (CSO)

In establishing CSO guidelines, the federal government should use a technology-based approach determined on a case-by-case basis using best professional judgment weighing costs and benefits. The cost-benefit analysis should carefully consider the cost of CSO control, the intermittent and dilute nature of CSO discharges, the extremely large rate of the discharges, and the often remote locations of CSO outfalls against measurable benefits.

In controlling pollution from combined sewer overflows, EPA should develop a risk-based policy which implements controls and establishes implementation schedules based on the severity and/or frequency of pollution caused by overflows.

Technology-based requirements should not be assumed to involve end-of-the-pipe technology such as retention followed by conventional wastewater treatment. The technology-based requirements should provide for a wide variety of control techniques such as infiltration/inflow control, street sweeping, and conveyance away from sensitive environmental areas. Partial or total sewer separation should be phased in over time.

Municipalities shall be deemed in compliance once control plans and implementation schedules are in place, assuming the controls are appropriate and the schedule for implementation is maintained.

EPA should establish a "wet weather task force" of state and local government representatives to develop realistic water quality standards taking varying climatic and hydrogeological conditions into account.

Funding allocations should take into consideration a community's ability to pay and past local efforts to address the problem.

19. Non-Point Pollution

Congress and the Administration should proceed as expeditiously as possible through expanded research and development, technical and managerial assistance, and funding to aid the efforts of local and state governments in the control of non-point sources of water pollution.

Congress should authorize a new supplemental grant program for the funding of non-point source pollution abatement.

TESTIMONY OF GREG SMITH, CHAIRMAN, MUNICIPAL ASSISTANCE TASK FORCE, OHIO ENVIRONMENTAL PROTECTION AGENCY

Mr. Chairman, I am Greg Smith of the Ohio Environmental Protection Agency and Chair of the Association of State and Interstate Water Pollution Control Administrator's (ASIWPCA) Task Force on Municipal Assistance. As you know, ASIWPCA is the national organization of State officials who implement the Clean Water Act on a daily basis. Our Association is committed to the environmental ob-

jectives set forth in the law, and we appreciate the opportunity to appear before you today to present the states' Clean Water perspective.

Tremendous strides have been made in cleaning up and protecting the environment. Since 1972, States have gained considerable experience addressing Serious' water quality problems confronting the nation and we come to share that experience and expertise. The States' recommendations are premised on the following principles:

PRINCIPLES

1. *The Clean Water Act is fundamentally sound. Significant refinements should however, be made to address program effectiveness* including:

- Increased funding for State management
- Continued Federal capitalization of the State Revolving Loan Fund (SRF).
- Increased State flexibility to operate programs more efficiently and effectively, to maximize environmental results and undertake comprehensive approaches.
- Elevated USEPA priority on the program's fundamentals—(eg: up-to-date effluent guidelines and water quality standards.)
- Enhanced nonpoint source management programs in the States.

2. *States must continue to have the lead role* in program development and management. Delegation of NPDES and SRF programs are cost effective, managerially efficient and institutionally appropriate.

3. *Additional time is needed to carry out the 1987 Amendments.* Lack of funding, inadequate technical resources and late issuance of policy and regulatory guidance have created unnecessary delays which must be accommodated in any reauthorization.

4. *Any new mandates must be accompanied by increased funding above the current baseline.* Expanded flexibility for States to tailor their programs in the most efficient and cost effective manner is also essential.

RECOMMENDATIONS SUMMARY

Municipal pollution from treatment plants and runoff cause both localized and national environmental problems. Because these problems can be significant and chronic, the Association recommends the following actions to enhance the program and maintain momentum. The Bill introduced by Senators Baucus and Chafee represents a good starting point. The ASIWPCA membership is in the process of reviewing this Bill and our Association will compile comments at our August Annual Conference. Once that review is complete, we will forward our more detailed comments to you Mr. Chairman. At this time, we provide the following:

- \$5 Billion in Federal funding annually should be authorized and appropriated for the SRF in accordance with the needs mandated by the Clean Water Act.

Specific comments: Statutory mandates must be balanced to reflect a \$2.5 Billion SRF level. The Bill provides a \$2.5 Billion baseline, with the possibility of up to twice that amount if annual budget targets are met. While the States appreciate the Committee's continued support for the SRF, the historical track record in addressing deficit reduction leads one to question the likelihood of additional funds in the out years.

- States oppose any effort to expand eligibilities without significant additional funding, it cannot be overemphasized that \$2.5-5 Billion is *inadequate* to accomplish the requirements of the current statute.

- States are concerned that dedicated sources of revenue are essential to maintain the SRE, i.e. leveraging potential, maintenance of Fund corpus, and preservation of good State bond ratings. Any deviations from current law should be undertaken with State consultation.

- States *strongly* oppose the Bill's requirement that States go beyond their existing 20% match to, in effect, leverage in order to achieve a 100% match for Federal funds. We anticipate that a number of States will not be able to fully participate under such conditions and the Federal government, which has trouble balancing its own budget is in a most precarious position when attempting to dictate to the States in this regard. Leveraging must remain optional and should not be mandated arbitrarily by law. Several States have indicated that this proposal, if implemented, could "kill" their SRE Programs. Other States have refrained from leveraging until such time as major CSO construction is needed. Forcing States now to leverage will foreclose that option.

The State Revolving Loan Fund (SRF) Program should be streamlined and focussed on construction of priority projects, in the shortest time frame, at reasonable cost.

Specific comments: The States applaud the Senate's efforts to streamline the SRF program.

Small-hardship communities should be assisted under the umbrella of the SRF, in the form of principal subsidies.

Specific comments: The Senate Bill responds to the issue of affordability, but the universe of eligible projects is overly broad. The threshold criteria would be subject to manipulation and the emphasis on loan forgiveness limits State creativity and will, over time, significantly erode Fund corpus. States must have the flexibility to structure hardship programs to meet the specific needs in their State, in a manner that preserves the integrity of the SRF.

The Act should support the Agency's revised policy on controlling combined sewers.

Specific comments: The ASIWPCA supports the bill's effort to encompass USEPA's draft policy.

- The stormwater program should be revised to focus on priority water quality problems. Workable permit requirements must be the focal point.

Specific comments: The Senate Bill does create an opportunity to make progress in addressing problems with the current program. However, it does not go far enough.

KEY ISSUES

I. INFRASTRUCTURE FINANCING

To continue and strengthen the State/Local/Federal partnership, the Federal government needs to continue to financially assist communities in their effort to meet Clean Water Act mandates. The commitment in the 1987 Act to create and support the SRF has not been met. The challenge is to assure adequate funds and use the Federal funds available *efficiently/effectively* to *equitably* bring about municipal compliance. A successful strategy must outpace inflation on over \$200 Billion in existing needs. The SRF is the *only viable mechanism* to address inflation and continuing need, because it leverages Federal capitalization funds over 2-5 times while revolving in perpetuity for community use.

A. State Revolving Loan Fund

ASIWPCA enthusiastically supports the SRF and we recommend that *all* Clean Water infrastructure assistance be incorporated under the Title VI umbrella. Beyond question, the SRF has been the most successful program established under the 1987 Amendments. All 50 States have created and are successfully implementing SRFs. In a pioneering effort to "reinvent government", before the term became politically correct, the SRF was designed to reward initiative and compliance, rather than encourage delay. The experience of the States clearly documents that projects can be built cheaper (in half the time) than a project which has received a grant.

1. *Federal Funding:* Continued authorization funding support is needed for two reasons:

Traditional Needs: Under the 1987 covenant between Congress, the Administration and the States, the Act authorized \$18 Billion for municipal wastewater treatment, \$8.4 Billion of which was to capitalize the SRF for \$78 Billion in *pre-1987 Act* needs. Regrettably, Federal appropriations have fallen \$1.7 Billion short of the authorization States estimate that at a minimum \$2 Billion annually will be needed to adequately capitalize the SRF for pre-1987 requirements.

New Requirements: The 1987 Act mandated substantial changes that were not considered when the covenant was reached, which will significantly impact local governments related to:

- More stringent water quality standards (i.e. advanced treatment),
- Toxics control requirements,
- Sludge management,
- Stormwater permit requirements,
- Nonpoint source control,
- Estuary protection,
- Combined sewer overflow correction, and
- Rehabilitation of existing facilities which reached their design life.

ASIWPCA estimates that the total wastewater treatment needs of this nation in the next 20 years will exceed \$200 Billion. To adequately capitalize the SRF, further Federal capitalization funds are needed and well worth the modest investment required.

Recommendation: \$5 Billion should be authorized annually.

2. *Eligibilities:* The SRF is grossly undercapitalized to meet the already broad eligibilities in the current law.

Recommendation: There should be no expansion of eligibilities until the Fund is adequately capitalized to meet the \$200 Billion in currently estimated needs.

Specific comments:

- "*Subsurface sewage disposal*" and "*associated management organizations*" should be defined. Emphasis on subsurface will not encompass all systems needing attention
- *Careful analysis is needed before establishing further eligibility for individuals.* Otherwise, the Fund's corpus will be endangered.
- *The intent to limit assistance for discharge activities* should be explained and clarified.
- *Dedicated sources of revenue should be maintained, as Indicated above.*

3. *Formula and Needs Survey:* Because the Association represents all 50 States, it is impossible for ASIWPCA to take a position on the allotment formula. The Association, is however, concerned that the methodology be objective and reasonably attainable within the data, resources and time available. The Needs Survey has been difficult to complete because there are many projects involved and judgment calls have to be made. As nonpoint source and watershed plans evolve, needs will increase exponentially.

Recommendation: A more concerted effort should be made by USEPA to develop a credible and comprehensive Needs Survey. All needs eligible for SRF financing under the Act should be included.

Specific comments: The survey methodology envisioned (e.g. assessment for traditional categories as well as a costing out of watershed plans) is impractical. Short deadlines, limited resources and lack of data complicate an already complicated system. All needs envisioned can be effectively reflected under the current Needs Survey approach.

B. *Grants:* ASIWPCA does *not* support re-creation of a grants program for several reasons:

- States worked diligently to establish SRFs and involve communities in the program's creation. The resurgence of Title II grant funding undermines these programs and encourages communities to *hold out* for the possibility of a future grant. This delays compliance and it reinforces the notion that if they put off solving their problems long enough, the Federal government will come to the rescue. Grants send the wrong message and penalize progressive cities and towns which took initiative to address their responsibilities to meet requirements of the Law.
- In today's budgetary environment, *grants are no solution.* Annual funding would be required far in excess of \$10 Billion to make on *any* measurable progress nationally. This does not take inflation into account.

Recommendation: A Title II/grant program should *not* be re-established. The Association supports the Senate Bill's incorporation of that philosophy.

C. *Small Community Assistance:* Refinements are needed in the SRF for *small-hardship* communities, in a manner that preserves the Fund's integrity.

States track over 15,000 small communities, less than 10,000 population under the Clean Water Act—49% need wastewater construction over the next ten years of over \$10 Billion. Over *one-third* of SRF projects are for small communities. While many are financially capable, in approximately half of the States, more than 50% needing construction cannot afford the debt service on a SBF loan for *all* project costs. The smaller the community, the less viable the SRF appears to be. Additional assistance needs to be provided *under an existing program* administered by the States, with "one stop shopping".

Recommendation: Title VI should be amended to provide a *supplementary authorization* in Title VI for small hardship communities under which States are authorized to:

Define "small", since what is suitable in one State may not be in another.

Blend principal subsidies with SRF loans to achieve a target State level of project affordability.

Make planning, design, construction, and acquisition of land/easements eligible. Exempt recipients from Title II/Federal cross-cutting laws, including the Davis Bacon Act

Allow up to 40 years for loan repayment for projects less than \$10 Million

Enable States to use a generous amount of administrative funds for outreach/technical assistance.

Specific comments: The Senate bill makes progress. However:

- *States must have the ability to define affordability and community size*, so that there is no manipulation or circumvention of intent, the program is compatible with existing efforts and funds are targeted to communities in need.
- *Principal subsidies are much more desirable than loan forgiveness.* The Bill could not adequately protect fund corpus (which could erode quickly) or assure compatibility with leveraging. It would create built-in incentives to "gold plate" designs and carelessly manage finances.
- *States question whether is it appropriate for communities of more than 10,000 population to qualify.* The need in the smaller communities is well demonstrated and funds are limited. Forgiveness up to \$20,000,000 (by community for all time or by project—the bill is not clear which) or 20% of the capitalization grant could easily be reached with one project. Competition could easily crowd out less sophisticated small communities that are most in need of assistance.
- *The provisions on technical assistance are complex and may actually provide less incentives than current State efforts.* The objective is to get small communities into the process. Tying assistance to payback in a potential SRF loan or partial grants is not always an incentive and appears to compete with the private sector. It would be much simpler to increase the State administrative set aside.
- *The bill should extend the loan repayment period and eliminate application of other Federal laws* as much as possible.

D. State Revolving Loan Fund Program Refinements: Based on State experience with the SRF, implementation program enhancements are needed to expedite and improve program performance as well as make the program more attractive to the ultimate consumer, local governments:

- **State Administrative Costs**—As defined by USEPA, 4% of the capitalization grant is available for State program administration and no more. This is inadequate: 1) the accumulated size of the SRF is not considered, and 2) when capitalization grants end, so do funds for administration.

Recommendation: The 4% administrative allowance should be tied to the *authorization* level, with a minimum of \$400,000 per State. No limitation should be placed on other contributions to the Fund (e.g. using loan repayments, bond proceeds, State funds, or other monies).

Specific comments: Provisions would provide relief in States that are highly leveraged, in most (e.g. small, rural States) any increase in funding based on the new approach (0.5% of total capitalization grants and funds deposited) appears to be negligible.

- **Requirements**—Each Title II Federal requirement applied increases costs and construction time which is problematic in a loan program.

Recommendation: The Act should clarify that only requirements specified in their entirety in Title VI apply and:

- **Cross-cutters:** The many Federal cross-cutting laws should not apply.
- **Eligibilities:** Since the SRF was created to fund projects broadly eligible under Sections 212, 319, and 320, the 20% limitation in Title II on use of funds for collector sewers, rehabilitation, combined sewer overflows, etc., should not apply.
- **Title II:** Some Title II objectives have value, but States should have discretion to apply them as appropriate. At a minimum, the following modifications to Section 602(b)(6) are necessary. Delete:

Section 201(g)(5), Innovative/Alternative Analysis

Section 201(6)(g), Recreation/Open Space Requirements

The word "proportional" in Section 204(b)(1), User Charge Requirements

Mandatory value engineering in Section 218

Specific comments: States applaud the Committee for its efforts, but urge further simplification.

- **Land Eligibility**—The SRF should provide "one stop shopping".

Recommendation: Acquisition of land, easements and rights of way should be eligible. The States support the Committee's effort to do so.

- **Loan Amortization Period**—Loan terms should be more affordable.

Recommendation: States should have flexibility to extend the 20-year loan repayment period up to 30 years for small hardship communities and up to 40 years for those with projects less than \$10 Million.

Specific comments: More consideration should be given in the Bill to this issue as a mechanism to readily achieve affordability.

- Federal Oversight—There is no policy on the USEPA/Inspector oversight.
- Recommendation:* The bill should clarify the duration of oversight, particularly related to reviews and audits. States should be able to use the Single Audit Act to satisfy the law.
- Title II Closeout—This issue needs to be addressed.

Recommendation: States should be able to use Title II de-obligations and reallocations in the SRF. Title VI administration funds should not be used to close-out the grants program, since they are inadequate for long term SRF management.

Specific comments: Use of unobligated funds (which could be significant under the Bill due the leveraging requirement) should not be limited to replacement of failed innovative/alternative systems. There can be much more environmentally critical uses for the funds.

The Bill appropriately addresses Title II closeout under Section 205(g).

- Planning Setaside—This holdover makes no sense in a loan program.
- Recommendation:* The 40% Title II pass-through to local governments should not apply to Section 604(b) funds.
- Specific comments:* States oppose any additional setasides of SRF funds for other purposes. There are already too many funds setaside. Planning should be funded elsewhere.
- Consistency: Project consistency with plans developed under the law is desirable.
- Specific comments:* Funding for projects developed under past efforts (e.g. the Great Lakes Water Quality Agreement) should not be held up or delayed while entities endeavor to develop watershed plans.

COMBINED SEWER OVERFLOWS (CSOs)

Through intense negotiations between cities, States, environmental groups and USEPA, the CSO program is now heading in the right direction and should be supported.

Efforts to address CSOs have been stymied by lack of understanding of the problem, inadequate funding and lack of consensus on a workable approach in a reasonable timeframe. The agreement reached recently under the USEPA Management Advisory Group by the Agency, provides a workable format for addressing national policy for CSO deadlines and program requirements.

Recommendation: The Clean Water Act should support the national policy. The Association supports the Senate Bill's effort in this regard.

Specific comments: NPDES delegated States should have the same authorities throughout the provisions as the USEPA Administrator. The law should recognize that in some instances the deadlines envisioned would be overly generous. Efforts to update bacteria standards should be addressed by requiring USEPA to update Section 304(a) criteria. Withholding permits is a circuitous route to addressing this complex issue and municipalities could be unduly exposed to citizen suits.

STORMWATER

ASIWPCA supports the Act's stormwater control objectives. However, the program should be refined so that it does not overwhelm and/or undermine the State NPDES permit program, Congress must recognize that there is a extremely large number of additional NPDES sources to be addressed (e.g. some States estimate that stormwater permits will exceed permits issued under NPDES by ten-fold.)

Requirements need to be more consistent with the funding available and expected water quality benefits. The most significant sources should be addressed first. All parties should clearly understand expectations.

Recommendation: The first round of permitting should emphasize specific control levels, followed by water quality assessment to identify needed additional actions based on standards. A realistic schedule is needed that phases implementation of regulatory programs:

- For municipal dischargers, controls that reduce discharges to the *maximum extent practicable* should be required.

- For industrial dischargers, the first round permits should require implementation of BMPs.
- Permits should not be required for municipalities less than 100,000 population, unless the discharge significantly contributes to pollution or the town is served by a separate stormwater system with a total population of 100,000 or more.
- Permits should not be required for industrial indirect discharges to permitted municipal separate storm sewers, unless the discharge is in violation of local requirements and an individual stormwater permit is needed.

Specific comments: The provisions make significant progress clarifying control requirements and their relationship to water quality standards. Although the intention was to more discretely focus the program on water quality problems, the Bill falls significantly short of that objective.

- Some provisions are confusing.
- There is overly broad inclusion of municipalities in SMSAs and source categories.
- Requirements would often be extremely resource intensive and difficult to justify based on the arbitrary boundaries and likely water quality improvements.
- The wet weather monitoring requirements would be extremely costly and would not consider or identify some important pollutant sources, such as air born pollutants.

SUMMARY

Mr. Chairman, the Association appreciates your leadership, and that of Senators' Baucus and Chafee, in providing a legislative vehicle for national debate on Clean Water. As you proceed to refine the bill, ASIWPCA and the States look forward to working closely with you and your staffs. I am delighted to answer and questions.

TESTIMONY OF EDWARD WAGNER, DEPUTY COMMISSIONER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

SUPPORT FOR THE CLEAN WATER ACT

Mr. Chairman and members of the Subcommittee, I am Edward Wagner, Deputy Commissioner of the New York City Department of Environmental Protection. I appear before you today representing the Association of Metropolitan Sewerage Agencies (AMSA). AMSA's members represent the nation's largest wastewater treatment agencies. We serve the majority of the sewered population in the United States, and collectively manage over 14 billion gallons of wastewater each day.

I am pleased to be here today to provide our perspective on the reauthorization of the Clean Water Act, and the recently introduced Water Pollution Prevention & Control Act of 1993, S. 1114. We sincerely appreciate the opportunity to share with you our thoughts and recommendations as environmental practitioners dedicated to protecting and improving the quality of the nation's waters.

AMSA supports the reauthorization of the Clean Water Act and its goal of fishable and swimmable waters. AMSA believes that this reauthorization must use an integrated and comprehensive strategy that establishes new priorities for achieving water quality goals. It must recognize the wide range of conditions present in our nation's watersheds and provide flexibility to decision makers so that they can address site-specific conditions. It must target all impediments to ecosystem health. It must develop mechanisms for control that properly balance environmental gains and their cost-effectiveness. And it must provide the funding to implement its clean water mandates.

While this is AMSA's vision of a reauthorized Clean Water Act, we also acknowledge, in our initial review of S. 1114, that the Senate legislation goes a long way toward realization of these goals. AMSA's concerns and priorities are present in the bill and reflected in its language. We commend Senators Baucus and Chafee for introducing legislation that clearly moves our national clean water program forward. AMSA has recently initiated a detailed review process of S. 1114 and will be reporting our specific comments and recommendations to the Subcommittee in the coming weeks.

PUTTING THE REAUTHORIZATION INTO PERSPECTIVE

First and foremost, it is important to put reauthorization of the Clean Water Act into an historical perspective. This nation, its states, cities and towns have made

enormous progress in the more than 20 years since the passage of the 1972 Clean Water Act.

In 1972, national standards that targeted point sources made sense because we had identifiable problems traceable to easily controlled sources. Congress provided funding, necessary deadlines and enforcement mechanisms. Coupled with a considerable amount of public support and motivation, this set the stage for our nation to successfully address many of its clean water challenges.

Today we face new challenges. While public support for environmental progress and improvement continues, the new and emerging issues we must address are more complex and costly. The control of combined sewer overflows and the management of stormwater and nonpoint sources of pollution provide excellent examples of new clean water priorities. Today, fiscal shortfalls at every level of government are unprecedented, which make dollars harder to get.

RECONCILING OUR CONSTRAINTS, OUR EXPECTATIONS AND OUR NEEDS

In a reauthorized Clean Water Act we need to reconcile the constraints of the 1990's with our continued high expectations and the need to make continuing progress.

Funding

Reconciling constraints with expectations within the context of the Clean Water Act will involve several things, the first of which is an increased and ongoing Federal financial commitment, in partnership with state and local governments. Attached to my testimony is a report AMSA has published called "The Cost of Clean". Among the key findings of the report are the following:

- Funds totalling over \$23 billion will be required for AMSA's member agencies to meet currently mandated clean water needs to the year 1995;
- We can expect operation & maintenance costs—which are paid totally by local government—to double every eight years;
- Historical data allows us to project that annual household user fees will, at a minimum, double every six years; and that
- Currently, local governments pay 80-90% of the "Cost of Clean".

I believe that we—my colleagues on this panel and the members of this distinguished Subcommittee—should work together to keep the Federal feet to the fire. We must not lose sight of the fact that the Clean Water Act sets forth a national program with an integral relationship to our nation's long term environmental health and economic growth.

The State Revolving Loan Fund Program (SRF) provides an excellent framework to fund our national clean water program. It is, however, a program that can be made exceedingly better with adequate funding, streamlined requirements, competitive rates and increased flexibility to allow both grants *and* loans. AMSA urges the Subcommittee to use this reauthorization as an opportunity to reassess the program and make it more responsive to this country's needs and goals.

The funding provisions in S. 1114 make important progress toward improving the viability of the SRF program. The legislation's expanded eligibilities and significant incentives should not go unrecognized. AMSA lends it support to S. 1114's provisions acknowledging the special needs of "disadvantaged communities" and endorses the bill's recognition that "disadvantaged communities" can come in all sizes.

Each of these actions represent significant forward progress; however, our survey, and many others like it, document the need for high levels of Federal funding to support the Clean Water Act. We cannot overemphasize the fact that local governments cannot go it alone when it comes to funding our national clean water priorities.

We're as committed as you are to aggressive progress in the clean water program; however, the kind of progress we're striving for comes with a high price tag and will require a doubling of Federal dollars for the clean water program. AMSA's long term funding position is attached to my testimony. You'll note that the Association calls for a \$6 billion dollar a year Federal commitment to clean water. This is not an estimate pulled from the sky, but an accurate reflection of our national funding needs to effectively meet existing requirements. I hope you will agree with me that Federal government support is essential to meet the environmental challenges we face as a nation.

Combined Sewer Overflow Control

The next step in reconciling constraints with expectations is for all of us to refocus our concerns and priorities. We need to resist the temptation to set unrealistic

deadlines and prescribe national solutions to local problems. Prescriptive national solutions do not, by their nature, provide the level of flexibility necessary to consider site-specific circumstances and result in the unnecessary expenditure of ever more scarce resources.

In support of this recommendation for necessary and desirable flexibility, I offer the following example. U.S. Environmental Protection Agency finalization of a draft National Combined Sewer Overflow Control Policy is anticipated this Fall. The policy—developed as a result of a stakeholder negotiation process in which AMSA took part—provides the balanced level of direction local communities have needed to proceed with CSO controls. In this policy, national direction is coupled with sufficient flexibility to consider site-specific variables. It is a welcomed solution to a complex problem—and one that resulted in an alliance of support between the Environmental Protection Agency, States, cities and the environmental community.

AMSA was gratified by the support for the National Combined Sewer Overflow Control Policy reflected in S. 1114, the Water Pollution Prevention & Control Act of 1993. The bipartisan recognition of the need to support this Policy, in the reauthorization of the Act, is well-founded and will result in environmentally sound CSO control nationally—without breaking the financial backs of local governments. The national policy, in concert with the legislative language in S. 1114, will allow responsible, effective CSO control to proceed. AMSA urges you to fully support, without further amendment, the combined sewer overflow provisions in S. 1114.

Stormwater Management

Some of my colleagues on this panel will have much more to say than I about S. 1114's approach to the important issue of stormwater management. AMSA would, however, like to speak in support of S. 1114's recognition of the effectiveness of best management practices in the control of stormwater, and endorse the legislation's movement away from the requirement of numeric water quality limits in stormwater permits.

THE SEARCH FOR A SOLUTION

There is a very important temptation that we—as a nation—must resist. I speak of the propensity to attempt to fix programs that aren't broken. There's an old adage, "If it isn't broken, don't fix it." That adage applies to many of the programs within the Clean Water Act. AMSA was gratified to see this approach taken by the drafters of S. 1114. The legislation represents a vast improvement over that which was under consideration during the 102nd Congress. The Committee and staff are to be commended.

The attention paid in S. 1114 to many long standing programs, as well as the important areas of pollution prevention, water conservation and, of course, comprehensive watershed management is a notable improvement. While AMSA will have constructive recommendations to improve and strengthen the bill, the legislation represents a significant step forward.

Comprehensive Watershed Management

AMSA views a national program for comprehensive watershed management as the best way to link limited resources with continued environmental improvements.

Our Association spent much of the last two years coming to one clear conclusion—that comprehensive watershed management, as a means to achieve our national water quality goals, makes a lot of sense. AMSA was gratified to see, in provisions of S. 1114, that the leadership of the Senate Environment & Public Works Committee shares this significant conclusion.

With our testimony we have provided you with the Principal Tenets that guided the development of the proposed legislation we have drafted entitled, the Comprehensive Watershed Management Act of 1993. The vision contained in the Comprehensive Watershed Management Act of 1993 calls for the development of comprehensive watershed management plans with the participation of all point sources, nonpoint sources, users of the watershed, citizens and levels of government.

As AMSA envisions it, the process for restoring watershed ecosystems follows rationally from a scientific analysis of site-specific conditions and the technologies available to improve those conditions. Priorities are established based on the quality and use of receiving waters, ecosystem health, and the sources of pollutants that legitimately threaten the watershed. AMSA believes that comprehensive watershed management planning must emphasize establishing priorities, maintaining flexibility and empowering local, regional and state government and the affected community-at-large to solve their unique problems.

The comprehensive watershed management language contained in S. 1114 takes a important step in the right direction. In particular, AMSA would like to commend the bill's authors for the significant incentives for watershed planning in the legislation.

AMSA believes that comprehensive watershed management should be the new foundation for the future direction of our Nation's clean water program. AMSA looks forward to working with you to broaden and strengthen the watershed provisions in S. 1114. We hope to share our specific recommendations in future testimony before you, Mr. Chairman, when the Subcommittee focuses specifically on the issue of comprehensive watershed management in July.

CONCLUSION

In conclusion let me suggest the following. We need to consistently search for better ways of doing things—more flexibility and more attention to site-specific variables, a better public awareness of what the problems are, the importance of solving them, and the best solutions. Local consensus-building must become an essential step in the framework for reaching the environmental milestones we set.

In short, we must strive toward a better understanding of the most effective, yet pragmatic, means through which we can accomplish our national clean water goals. There has to be a measurable and meaningful return for our investment.

As we shift our attention toward fully restoring our watershed ecosystems, we all recognize that we have a long way to go. No one ever suggested that the task of improving and protecting the nation's waters would be an easy one—however, working together, I know we can succeed.

Again, AMSA will be providing detailed comments and recommendations regarding S. 1114, the Water Pollution Prevention and Control Act of 1993, in the coming weeks. We look forward to working closely with this Subcommittee, the Environment & Public Works Committee and the Senate as they proceed with reauthorization of the Clean Water Act.

This concludes my testimony. I would be pleased to answer any questions you may have.

Attachments: The Cost of Clean

Long Term Funding Position Statement

Principal Tenets—

The Comprehensive Watershed Management Act of 1993

LONG TERM CLEAN WATER FUNDING

MARCH, 1993

AMSA believes long term Federal funding for the nation's clean water program at a level of \$6 billion/year is essential to continued environmental progress. Clean water funds should be provided through a combination of direct grants to municipalities and capitalization grants to states for State Revolving Loan Funds (SRF). The source of these funds would be general fund revenues and newly generated dedicated revenues.

The funds would be disbursed through an equivalent combination of direct grants to municipalities (at 50% of the total funds provided) and capital grants of the remaining 50% to SRFs for loans. The allocation of grant funds within each state would be determined on a state-by-state basis.

These funds would be used to support the efforts of the nation's communities to meet current and emerging requirements of the Clean Water Act, including upgraded treatment, combined sewer overflow control, stormwater management and the rehabilitation and replacement of facilities.

Funding for other local environmental infrastructure construction, particularly that related to Safe Drinking Water Act requirements, should be provided in addition to clean water funding for wastewater facilities construction needs.

BACKGROUND

AMSA believes that the Clean Water Act's historic focus on technology-based standards and end-of-pipe treatment, framed by aggressive schedules for compliance and supported by significant federal funding, has achieved enormous reductions in the pollutants discharged to our nation's waters. These successes would have been impossible without one element in particular—the significant Federal support provided through the Construction Grants Program.

The fact of the matter is, the grants program worked. Federal, state and local monies provided the impetus to improve and protect our nation's waters. Today, significant needs remain. Wastewater construction needs to meet mandated requirements of the Clean Water Act remain at significant levels. An estimate based on the U.S. Environmental Protection Agency's 1990 Needs Survey places total unmet needs at \$110 billion. This total includes \$25 billion for unmet secondary treatment needs. In addition, combined sewer overflow control needs, reported at \$16 billion 1990, could potentially total as much as \$200 billion, depending on National Pollutant Discharge Elimination System (NPDES) permit requirements. Compliance with federal stormwater NPDES permit requirements and water reclamation and reuse projects will result in needs in addition to these amounts.

AMSA's Financial Survey and *Cost of Clean* report document that annual household user fees are doubling every six years and are projected to increase at a greater rate in the future due to increased construction, operation, maintenance and financing costs for existing and newly mandated requirements.

Recognizing the budgetary constraints existing at all levels of government, we must manage environmental expenditures carefully to achieve the greatest benefit for the dollars available for investment. As we look to FY 1994, our focus must shift to a more comprehensive approach, addressing the control of costly, more complex and diverse sources of pollution. One thing, however, must not change. Continued federal funding of projects mandated by the Act is critical to the ultimate achievement of national water quality goals.

Further, AMSA believes that federal financial assistance is required to support research and development for a sound, scientific basis in the development of a water quality-based pollution reduction strategy. Federal financial assistance is also necessary to support state administrative costs and the development of comprehensive, site-specific, pollution reduction strategies.

PRINCIPAL TENETS OF THE COMPREHENSIVE WATERSHED MANAGEMENT ACT OF 1993

1. The overall objective of comprehensive watershed management planning is to make cost-effective, site-specific decisions that achieve water quality objectives that protect the designated beneficial uses of a watershed.
2. Science must be the basis for public policy decisions.
3. All players must be at the table to equitably address future water quality objectives.
4. Local government and publicly-owned treatment works must have an active role in establishing water quality objectives for the watersheds in the which they are located.
5. Local stakeholders (government entities, sources of watershed impacts, users of the resources within the watershed, the public and others with a specific interest in how the watershed is managed) must have the clearly stated opportunity to provide recommendations and direct advice and counsel to the Governor regarding the designation of their watershed boundaries and the makeup of its Commission.
6. Progress on water quality improvement, including minimum standards of operation (MSOs), must continue as comprehensive watershed management planning moves forward. Until a watershed management plan is completed, permitting agencies that are responsible for National Pollutant Discharge Elimination System (NPDES) permits must take into account those sources within a watershed that cause water quality impairment and must accordingly exercise flexibility and discretion in exerting their regulatory authority in setting effluent limits and compliance schedules, and in conducting enforcement activities.
7. Time frames for completing a comprehensive watershed management plan must be realistic.
8. Implementation of elements of the comprehensive watershed management plan must be verified and enforced to assure equity among all sources or categories of sources of pollutants of concern in a watershed.
9. The scheduling of compliance with Clean Water Act requirements and prioritization of resources to achieve water quality objectives shall be guided by watershed plans. One expected outcome of an approved watershed management plan is that NPDES terms, conditions and limits shall be modified as appropriate to cost-effectively achieve the water quality objectives of the plan.
10. Comprehensive watershed management planning and the federal/state legislative and regulatory framework shall be compatible and fully integrated.

TESTIMONY OF ROBERT W. ADLER, NATURAL RESOURCES DEFENSE
COUNCIL, INC.

Mr. Chairman and members of the committee:

Thank you very much for this opportunity to appear today to testify on funding and municipal pollution issues in Clean Water Act Reauthorization. My name is Bob Adler. I am a Senior Attorney and Director of the Clean Water Project of the Natural Resources Defense Council, Inc. (NRDC).¹ I also chair the Steering Committee of the National Clean Water Network, which has over 420 groups nationwide working together to strengthen the Clean Water Act.² Also with me today is Diane Cameron, an environmental engineer at NRDC, to answer any technical questions about stormwater.

I would like to commend Senator Graham for scheduling this comprehensive series of hearings; and Senators Baucus and Chafee for introducing S. 1114, which will serve as an important starting point for most of the issues that will be addressed during these hearings. A number of other important and commendable bills have been introduced by other members of this Committee, such as S. 815 by Senator Lieberman on the National Estuary Program, and S. 997 by Senator Lautenberg on beach protection.

INTRODUCTION AND SUMMARY

Significant progress has been made over the past twenty years to reduce water pollution from municipal sources. Yet municipal pollution remains among the most daunting challenges facing water quality officials around the country for two reasons. First, the cost of municipal pollution control remains high at a time when federal, state and local fiscal resources are becoming increasingly scarce. Second, the intermittent but severe pollution that occurs in cities around the country every time it rains, from both separate and combined sewer systems, has not received the same attention as traditional sewage discharges.

NRDC strongly supports efforts to increase funding for Clean Water Act programs. It is essential, however, that if more federal dollars are spent on pollution control, the public be assured that it is purchasing more, not less, environmental protection. This means that we must find better, more efficient ways to spend our pollution control dollars. We must seek solutions to CSO and stormwater discharges that are cost-effective, without turning our backs on the serious human health and environmental problems caused by those releases. And increased federal funding of pollution control programs must be accompanied by increased accountability to the public that more environmental protection will result.

For these reasons, NRDC and other environmental groups worked closely with the Association of Municipal Sewerage Agencies last year, to negotiate a rational framework for resolving CSO problems in a cost-effective way. While the municipal officials who were party to those negotiations were consistent in their defense of municipal budgets, they chose to seek a solution that would nonetheless result in significant environmental progress. This process was laborious, consuming many long and frustrating hours of discussions. Ultimately, however, we reached a landmark agreement on CSOs, and are extremely pleased that the results of this negotiation are included by reference in S. 1114.

By sharp contrast, we were extremely disappointed to learn that the approach to stormwater control in S. 1114 undercuts, rather than supports, ongoing efforts to negotiate a reasonable solution to municipal stormwater problems. For the past year, NRDC and other environmental groups have been engaged in detailed discussions with the California Stormwater Quality Task Force, the National Association of Flood and Stormwater Management Agencies, and others in an effort to reach consensus on a workable, nationwide municipal stormwater program. While it is impossible to predict the success of such negotiations in advance, I believe it is possible to reach an accommodation which is satisfactory to all interests. By proposing to exempt large categories of municipalities from stormwater permits, however, and by weakening substantially stormwater control requirements for even the largest of cities, we fear that the stormwater provision of S. 1114 will now repolarize the stormwater debate. Municipal stormwater officials may no longer feel a need to compromise. At this point, NRDC and other environmental groups believe we will have to oppose the stormwater provision of S. 1114. Therefore, we urge Senators Baucus and Chafee to reconsider section 402 of S. 1114.

Finally, there are a number of concepts, not currently included in S. 1114, which could contribute the more cost effective use of federal water pollution funding. These include incentives for least cost water planning, to assure that water conservation investments are assessed on an equal basis with increased capacity; improved

incentives for innovative and alternative water pollution control techniques, especially where they result in reduced construction as well as operations and maintenance costs for small communities; and set-asides in SRFs for programs that are consistent with sound watershed plans, as suggested, for example, in Senator Lieberman's NEP bill, so long as firm mandates exist for implementation of those plans.

I. THE NEED FOR INCREASED, MORE EFFECTIVE CLEAN WATER FUNDING

A. Shortfalls in Clean Water Funding

The federal government has invested tens of billions of dollars in municipal sewage treatment since 1972,³ with total federal, state and local expenditures of over \$130 billion. These investments gained impressive results. The percent of the U.S. population served by wastewater treatment plants jumped from 42% in 1970 to 67% in 1975, 70% by 1980, and 74% by 1985.⁴ As of 1988, 58% of the U.S. population was served by plants providing secondary treatment or better.⁵ EPA estimates that annual release of organic wastes have been reduced by 46% as a result of this improved treatment, despite a large increase in the amount of wastes treated.

The same measure viewed from the opposite direction, however, shows a glass only half full. By 1988, public sewer systems serving 26.5 million Americans provided less than secondary treatment, and 1.5 million people had *no* treatment, discharging raw sewage into public waters.⁶ About 70 million people were not served by Public sewers at all;⁷ while many of these people have properly designed and maintained septic systems, others have in-ground systems that leak pollutants into surface or groundwater.⁸ In 1990, EPA estimated that the cost of meeting these additional municipal treatment needs through the year 2010 would exceed \$110 billion (in 1990 dollars).⁹ The EPA Needs Survey, moreover, does not account fully for funding needed to address pollution from CSOs. Estimates of the cost of addressing this problem are as high as an additional \$80 billion.¹⁰ Other important clean water programs, such as the requirement for cities to develop comprehensive programs to control polluted urban runoff, impose additional costs on many communities. Cities estimated that they spent \$130 to 140 million nationally to prepare stormwater permit applications, and that compliance costs will be higher.¹¹

Judged by these investment needs, while our municipal pollution control efforts have taken a giant step since 1972, we are still only half way to our destination. Some of these needs are for advanced treatment systems to reduce discharges of nutrients; but others are still to tackle ongoing releases of raw sewage into the Nation's waters.

In addition to these project needs, federal, state and Tribal water quality management programs around the country require increased funding as well. For example:

- EPA funding has not grown as fast as the proliferation of Congressional mandates. EPA's operating budget was slashed badly in the early 1980s. While some amends were made in the late 1980s and early 1990s, EPA's overall operating budget grew by only 25% (in constant dollars) from 1981 to 1992, a time during which major new environmental laws were passed or in early phases of implementation (such as Superfund and RCRA), and others were expanded dramatically (including the Clean Air and Clean Water Acts).¹²
- State and tribal water quality programs also are underfunded. The States have identified a \$400 million shortfall in the funding they believe is necessary to manage state water quality programs. Native American Tribes believe an additional \$40 million is needed for tribal water resource programs nationally.¹³

While the high cost of municipal pollution control is felt all over the country, cities at the extreme ends of the size spectrum appear to be hardest hit:

- Some of the highest sewage treatment bills are concentrated in a few large cities, such as New York (estimated \$10 billion in needs), Los Angeles (\$5 billion), Cincinnati (\$2.5 billion), Sacramento, Boston, San Diego and Seattle (each above \$1 billion). Rate hikes in these cities could have serious impacts on urban poor populations.¹⁴
- Other severe funding problems occur in small, rural communities where lack of access to bond markets and diseconomies of scale make modern sewer systems difficult to afford.¹⁵

B. The Case for Increased Federal Funding for Clean Water

Available public opinion data shows that Americans support stronger water quality protection overwhelmingly. In its Fifth Annual survey of the best places to live in America, MONEY Magazine ranked what Americans most want in a city. The most highly-valued characteristic was clean water. The local leisure activity with

the highest rating was access to a lake or ocean.¹⁶ Both measures indicate the high value Americans place on the quality of our water resources.

More rigorous surveys underscore the public's concern about water pollution. In a 1992 Roper poll, water pollution topped the list of the most serious environmental problems, with 77% of the respondents agreeing that water pollution was one of the "most serious" problems. An even higher percentage (79%) believed that current water pollution regulations do not go far enough in protecting public resources.¹⁷

A comprehensive review of over 500 public opinion surveys conducted since 1974¹⁸ confirms that the public ranks water quality high among environmental problems. According to this survey, most people believe water quality problems are getting worse, and the percentage of people who share this view has increased since the Clean Water Act was passed.¹⁹

Meeting our water pollution needs will be expensive, but it is useful to put these costs in perspective. As a nation EPA estimates we spend less than half of the money on environmental protection that we spend on clothing, a third of what we spend on defense and medical care, a fifth of what we spend on housing, and a sixth of what we spend on food. Moreover, while environmental investment has been increasing over the past two decades, it is actually declining as a percentage of our total capital investment, that is, we invest a smaller percent of our money in the environment than we did several years ago.²⁰

As a second perspective, in 1992 Congress (through the Intermodal Surface Transportation and Efficiency Act (ISTEA)) agreed to federal spending of roughly \$30 billion a year over five years to improve highways and other forms of surface transport. While this spending may be justified, it is ironic that we spend 15 times as much each year to build and restore our artificial railroads and highways as we do to protect and restore the natural riparian highways that served as America's original, natural transportation system, and provide us with so many other economic and ecological benefits as well.

Finally, by not investing in clean water, we are also losing access to potential jobs. Different sources indicate that investment of \$1 billion in water and wastewater infrastructure will generate between 6,400 and 15,600 jobs directly involved in project completion. Estimates of indirect effects could be as large as 13,600 jobs per billion dollars invested. Total effects, including direct, indirect, and induced have been estimated at 34,200 to 57,400 jobs per billion dollars invested. And, the estimated \$8.3 billion (1991 dollars) shortfall in funds for water and wastewater capital for the period 1993-2000 could represent 2,865,900 to 4,810,000 job-years of employment.²¹

According to the Maryland Institute for Ecological Economics, even more jobs can be created by investing in "natural infrastructure," through the restoration of wetlands, streambeds, fisheries habitat, and other essential components of aquatic ecosystems. These economists predicted that investments in aquatic ecosystem restoration would produce an average of 30 jobs per million dollars spent, a higher job creation rate than generated through public investment in roads (37% higher), water and sewer systems (24% higher), and major defense contracting (28% higher).²² The National Academy of Sciences proposes a long-range program to restore America's badly-degraded aquatic resources.²³ Investment in such a program could generate tremendous long-term ecological as well as economic benefits.

Increased public spending to protect and restore our aquatic ecosystems, then, produces multiple public benefits. Most important, it will help to provide cleaner water and healthier habitat for fish and wildlife. This, in turn, can improve human health and restore fish and wildlife populations that are valuable for their own sake, and support important industries as well. Incidentally but also important, public investment in clean water also creates jobs in many sectors of the economy.

C. Proposals to Improve the Use of Federal Dollars

If additional federal dollars are spent on water pollution programs around the country, the public should be assured that its tax dollars are being spent wisely. The following proposals would help to ensure that federal funding of SRFs will be used as cost-effectively as possible.

1. Least Cost Water Planning

We welcome the recognition of water conservation as one of the new water pollution control strategies highlighted in the Findings of S. 1114. Additionally, section 403 of the bill would authorize technical assistance on water conservation to communities and businesses, and the establishment of a national clearinghouse on water conservation technologies. Both of these are useful steps, but they fall far

short of the nation's need to bring cost-effective water conservation measures quickly on line.

Simply put, water conservation is dollar conservation. In recognition of the huge costs that remain before us to achieve our water quality objectives, Title I of the bill would extend and increase Federal financial assistance to States for aid to publicly-owned treatment works. Given the enormity of the job remaining to be done, the Federal taxpayer has a strong interest in making sure that limited dollars are spent effectively.

Under these circumstances conservation opportunities should be carefully weighed by each claimant on Federal funds. Many of the costs of wastewater collection and treatment are closely related to the quantity of wastewater flows that must be handled. This is true for capital costs, as well as operating costs. Communities from San Jose to New York City are finding that investment in water conservation can reduce the need for investment in wastewater treatment, on a cost-effective basis.

We recommend that communities seeking financial assistance from state revolving funds for purposes of expanding wastewater treatment capacity be required to prepare an "integrated resource plan." This approach to planning is gaining widespread acceptance among electric utilities and state regulatory agencies. Integrated resource planning involves the evaluation and comparison of a wide range of measures to improve efficiency, whether on the customer's side or the utility's side of the meter. Measures that reduce demand are compared with measures that increase supply for a given service—in this case, wastewater treatment. Integrated resources planning would also seek to identify opportunities for saving costs for water supply systems as well. The product of such a plan is a project or projects that will reduce the life-cycle costs and environmental costs to society. Where water conservation is not cost effective, it is not part of the project.

We also recommend that the eligibility criteria for the use of state revolving funds be clarified for water conservation projects. Where water conservation measures are found to reduce the capital or operating costs of wastewater treatment, they should be eligible for funding by the states.

2. Targeting Funding to the National Estuary Program and Similar Watershed Management Programs

The National Estuary Program (NEP), added to the Clean Water Act (as section 320) in 1987, allows the Governor of any state to nominate an estuary as an "estuary of national significance." If EPA finds that supplemental controls are necessary to attain the water quality goals of the Act, these estuaries are eligible for funding to convene a conference to develop a comprehensive management plan for the estuary. Congress initially designated eleven estuaries for priority consideration, and the program has now grown to include 17 estuaries around the country.²⁴

Management conferences are intended to assess trends in water quality and natural resources; evaluate pollution and other sources of impairment; and develop and implement comprehensive corrective actions to restore and maintain the chemical, physical and biological integrity of the estuary. Designed as a participatory process, NEP management conferences are to include representatives of affected states and foreign nations; federal agencies; local governments; and affected industries, educational institutions and the public.

The NEP strives to be a true comprehensive watershed initiative, instructing that all sources of impairment be assessed and remedial actions designed and implemented to tackle these problems. However, NEP suffers in scope and ultimate commitment to implementation. The 21 estuaries now included in the program, for example, represent just a third of the estimated 35,624 square miles of estuaries in the country.²⁵

More important, while section 320(f) (2) of the Clean Water Act states clearly that "[u]pon approval . . . such plan shall be implemented," the law includes no firm way to ensure that the public will get appropriate action for its money. First, while the provision identifies items that must be considered in developing a plan, few specific mandates limit EPA's ability to approve management programs as sufficient to meet the requirements of the Act; and no provision requires that, as Congress intended, the program be used to go beyond the existing (non-NEP) requirements of the law. Second, future NEP grants are not conditioned on actual implementation of management plans. EPA reported in April, 1992, over five years after the program was created, that only two of the estuary conferences (Puget Sound and Buzzards Bay) had completed management plans and moved fully into the implementation phase.²⁶

In order to make NEP a working rather than a paper model for watershed protection, Congress should:

1. *Mandate implementation and fixed time-frames.* After development of the CCMPs there is no firm requirement that the plans be implemented. In addition, the planning process itself is often unnecessarily stalled and, therefore, extends well beyond its five year limit. To date, the National Estuary Program has been generally successful at identifying water quality problems. However, it is essential that the program move from problem identification to implementation of the solutions to these problems. Section 320 of the CWA should be amended to extend the program, but with strict requirements for the plans to be implemented in a timely way. Federal financial assistance should be provided to assist in the effort. Deadlines are necessary to ensure that individual members of the management conference are not able to stall the entire process.

2. *Expand the role of the EPA.* The role of the EPA, as an active participant and as a coordinator of the appropriate environmental agencies, has not been consistent in each of the projects nor has its level of commitment to the NEP. Section 320 of the CWA should require the EPA to take on a more aggressive leadership role in assisting the program to fulfill its goals. Actions taken by the EPA need to be coordinated better with the Governor's office and state coastal zone management offices. States should also be required to adopt the stronger (or more protective) of their own state coastal management and environmental protection plans or the final CCMP.

3. *Increase citizen participation.* Citizen participation during the development of the CCMPs is often inadequate, as is the funding necessary to accomplish this goal. Section 320 should be strengthened by requiring citizen participation in all aspects of the CCMP process. Public hearings should be held on a regular basis throughout the life of the program. Funding is needed to ensure full citizen participation and for public education efforts.

4. *Establish a Funding Mechanism for State Implementation.* Due to state budget shortfalls and lack of federal support, many states have not been able to follow through on their CCMPs; therefore, there is no guarantee that these plans will ever be implemented, monitored, and enforced. The Clean Water Act should include a funding mechanism to ensure that the states are given federal assistance so that the CCMPs can be implemented, enforced and closely monitored. Federal funds also provide an incentive for states to undertake the more politically difficult task of putting the planning elements into practice. States are eligible to receive CCMP implementation funds under the State Revolving Fund (SRF) program, however, current appropriation levels are severely inadequate to meet the growing demand for funding.

S. 815, introduced by Senators Lieberman, Dodd, Moynihan and O'Amato, would increase NEP funding contingent on resolution of many of these problems. The Lieberman bill, however, is just one example of watershed-based planning that can be used to target the use of SRF dollars. Similar tools should be used to direct the use of funding in other types of water bodies around the country, as an incentive for sound watershed-based planning and management. However, as with the Lieberman bill, set-asides for such funding must be made contingent on firm assurances that plans will be implemented properly, and not just used for endless planning.

II. THE NEED FOR EFFECTIVE STORMWATER AND CSO CONTROLS

A. URBAN STORMWATER

1. STORMWATER CAUSES SERIOUS ENVIRONMENTAL PROBLEMS

Members of this Committee are well aware of the serious problems caused by polluted stormwater runoff. During debates on the 1987 Water Quality Act Senators Mitchell and Chafee noted:

Runoff from municipal separate storm sewers and industrial sites contains significant volumes of both toxic and conventional pollutants, including 13 toxic metals, in the discharge from municipal separate storm sewers that were studied. Of these, lead, copper, and zinc were the most pervasive; EPA found these pollutants in at least 91 percent of its samples. The same study also estimated that municipal separate storm sewers discharge 10 times the total suspended solids that the Nation's secondary sewage treatment plants discharge.

Toxic and conventional storm water contaminants may adversely affect public health, harm fish and other aquatic life, and prevent or retard water quality improvements even when the best available pollution controls are installed on other point sources.²⁷

EPA's Nationwide Urban Runoff Program (NURP) is the primary evidence of the ubiquitous nature and significant quantities of pollutants in urban runoff:

Data collected under the NURP indicated that on an annual loading basis, suspended solids in discharges from separate storm sewers . . . are around an order of magnitude greater than solids in discharges from municipal secondary sewage treatment plants.²⁸

Chemical oxygen demand, fecal coliform, and oil and grease in urban runoff are also significant. EPA describes urban runoff as "an extremely important source of oil pollution to receiving waters. . . ." ²⁹ Construction runoff is also a massive problem:

Intensive construction activities may result in severe localized impacts on water quality because of high unit loads of pollutants, primarily sediments. . . . Sediment loadings rates from construction sites are typically 10 to 20 times that of agricultural lands, with runoff rates as high as 100 times that of agricultural lands, and typically 1,000 to 2,000 times that of forest lands. *Even a small amount of construction may have a significant negative impact on water quality in localized areas.*³⁰

Stormwater also contains toxic chemicals: 77 of 120 toxic priority pollutants monitored were found in storm water from residential, commercial, and light industrial lands.³¹ Of these toxics, 24 were found in over 10 percent of all samples taken.³²

The NURP authors described the water quality impacts of urban runoff as falling into three categories:

- short-term receiving water impacts during or following storm events (where pollutant concentration is important);
- longer-term downstream receiving water effects—the buildup of contaminants in the sediments of "sinks" like river mouths, lakes, and bays (where seasonal or annual pollutant mass loads are important). (Although NURP did not examine in detail this phenomenon, NURP data enable coarse estimates to be made of runoff annual mass loadings from large urban areas.)
- physical effects of storm flows on the hydrology and geomorphology of urbanized watersheds—including stream channel scouring.³³

The flow of storm water itself damages streams, and is a major source of degradation of water bodies in urban areas. The severe physical habitat effects that can result from storm water discharges can include streambank erosion and rapid changes in stream channel morphology, loss of protective riparian trees and other vegetative cover, and the loss of pool and riffle structures. All of these changes, caused by high volume and velocity stormflows that occur with great frequency after the construction of impervious surfaces such as parking lots, destroy the habitat necessary to support fish and other aquatic life.

More recent information confirms the severe continuing impacts of polluted stormwater urban runoff. Studies conducted by NRDC in U.S. cities have shown that the contribution of urban runoff to total annual pollutant loadings to urban streams and estuaries rivals, and in some cases surpasses, loadings of the same pollutants from factories and sewage plants.³⁴ Using national average runoff pollutant concentration data derived from the NURP study, NRDC made coarse estimates of runoff pollutant loadings for heavy metals, oil and grease, BOD, nitrogen, and phosphorus for seven urban areas around the country: Baltimore, MD; Washington, D.C.; Harrisburg, PA; Tidewater, VA; Los Angeles, CA; Atlanta, GA; and Cleveland, OH. Although the results varied from city to city, these "Poison Runoff Indexes" showed that runoff rivals, and in some cases surpasses, factories and sewage plants as a source of these pollutants. For instance, in most of the urban areas modeled by NRDC, zinc loadings from runoff exceeded the loadings from large factories in the State or region.³⁵

EPA, as well, confirms the continuing significance of stormwater pollution. Over 9800 impaired river miles, or 5.7% of total impaired miles, were polluted by construction runoff in the 1988-90 section 305(b) reporting cycle, and over 18,000 impaired river miles, or 10.6% of total impaired miles, were polluted by storm sewers from urban sites in the same cycle.³⁶ According to a 1992 EPA study of stormwater discharges, urbanization degrades a disproportionate share of our nation's waters:

While urban population areas take up only about 2.5% of the total land surface of the country, stormwater pollution from these urban areas and associated urban activities (i.e., storm sewers/urban runoff, combined sewers, hydromodification, land disposal, construction, urban growth, etc.) accounts for a proportionately high degree of water quality impairment (i.e., 18% of impaired river miles, 34% of impaired lake acres, and 62% of impaired estuary square miles

reported under 319) when compared to that from rural activities (i.e., agriculture, silviculture and mining) which take up approximately 53% of the total land surface.³⁷

2. THE STORMWATER PROGRAM HAS FACED CONTINUOUS DELAYS SINCE 1972

Despite these severe problems, it has taken EPA over twenty years, with constant prodding from environmental groups, Congress and the courts, even to begin to deal with stormwater. In 1973, EPA acknowledged that stormwater discharges fall within the Clean Water Act definition of "point source." However, EPA rules exempted many stormwater discharges from NPDES requirements, arguing there were simply too many outfalls to regulate.³⁸ NRDC successfully challenged EPA's authority to exempt these and other point sources from regulation.³⁹

NRDC's successful court challenge, however, was a classic case of winning the first battle in what would be a very long war. Over the course of the next decade, EPA issued and reissued stormwater control regulations, only to have them challenged in court, or withdrawn by the agency itself as administrations and policies changed. Separate proposed or final rulemaking notices were issued in 1979, 1980, 1982, 1984, and 1985.⁴⁰

In the 1987 Clean Water Act Amendments, Congress recognized the role of contaminated storm water runoff in the ongoing severity of the pollution of this nation's waters, and expressed impatience with EPA's slow progress:

... stormwater runoff from urban areas contains large volumes of toxic materials and other pollutants. Since 1972, municipal separate storm sewers have been subject to the point source permit requirements of the Clean Water Act. However, EPA only recently began to develop a permit program for these sources.⁴¹

To address this long history of delay, in 1987 Congress put EPA on a *new*, phased schedule for regulating storm water. EPA was first to regulate large cities (systems serving over 250,000 people) and industries, then medium municipalities (systems serving over 100,000 people), and finally small municipalities and other sources.⁴²

Congress extended these statutory deadlines reluctantly and only because EPA had failed to develop a viable storm water program. Senator Stafford stated, "... I generally do not support willingly any delays in environmental programs, especially a program to control a source of toxic pollutants as important as this one is. EPA should have developed this program long ago. Unfortunately, it did not."⁴³ Congress fully expected EPA to enforce the statutory deadlines in the 1987 Amendments. Senator Chafee stated, "... I expect EPA to move rapidly to implement this control program,"⁴⁴ and Senator Stafford said, "[t]he conferees believe that these new dates are responsible and reasonably can be achieved in virtually all cases."⁴⁵

Once again, however, EPA violated the law's deadlines for issuing stormwater regulations. The first phase of stormwater rules was issued nearly two years after the deadline (November 16, 1990), after a deadline suit was brought by an environmental group in Oregon. EPA again included major loopholes in its rules—for example, exemptions for a large number of industries and construction sites, which were once again rejected by a federal court after a legal challenge by NRDC. EPA still has not issued rules for small cities and other sources of stormwater;⁴⁶ last year, in an obscure, last-minute provision of the Water Resources Development Act which was subject to no public comment (much less debate), Congress provided an additional two-year extension for the remaining municipal areas.

This chronic history of delay in dealing with the severe problems caused by stormwater pollution outlined above are summarized in table 1.

TABLE 1.—DELAYS IN IMPLEMENTING THE URBAN STORMWATER PROGRAM

Date	Event
1972	Clean Water Act Requires Permits for All Point Sources (applications by 1973, permits by 1974)
1973	EPA Regulations Exempt Most Sources of Stormwater
1975	U.S. District Court Rules EPA Loopholes illegal
1977	U.S. Court of Appeals Upholds District Court
1980	EPA Issues Rules Responding to Court Decisions, but Exempts Cities Outside "Urbanized Areas"
1982	EPA issues "Nonenforcement Letter" informing Cities it would not Take Enforcement Actions Against Cities with Permit Applications

TABLE 1.—DELAYS IN IMPLEMENTING THE URBAN STORMWATER PROGRAM—Continued

Date	Event
1984	EPA Rule Further Extends Stormwater Permit Deadlines Until 1985
1985	EPA Rule Further Extends Stormwater Permit Deadlines Until 1987 and 1989
1987	Congress Modifies Program and Extends Stormwater Permit Until 1992, with Phased Permitting
1989	EPA Sued for Missing 1989 Deadline for Issuing Stormwater Rules
1990	EPA Issues Final Stormwater Rules Extending Compliance Deadlines Beyond Those in 1987 Law
1991	EPA Issues Revised Rules Further Extending Stormwater Compliance Deadlines
1992	EPA Issues Revised Rules Again Extending Stormwater Compliance Deadlines
1992	U.S. Court of Appeals Prohibits EPA from Further Extending Stormwater Deadlines
1992	Congress Provides Additional Extension of Stormwater Deadlines for Small Cities (in WRDA)
1993	S. 1114 Proposes to Exempt Most Cities Under 100,000 From Stormwater Permits Altogether

3. THE CURRENT MUNICIPAL STORMWATER PROGRAM IS FLAWED

Perhaps more important than the rulemaking delays were fundamental flaws in the rules issued by EPA in 1990:

(a) EPA narrowed significantly the scope of municipal separate storm sewer systems covered by the first rounds of permitting, leaving the vast majority of cities for later; and

(b) EPA failed to provide any significant guidance on the scope or substance of municipal stormwater programs, leaving on-the-ground controls entirely up to individual cities.

(a) Gaps in Coverage

Under EPA's implementation of 402(p), a total of 173 cities with populations of 100,000 or greater, and 47 counties with unincorporated populations of 100,000 or more, were required to have stormwater permits by October 1, 1992.⁴⁷ EPA excluded from coverage a total of 411 municipalities, each of which included populations over 100,000 according to the 1980 Census. Many of these are densely-populated suburbs of major metropolitan areas such as Atlanta, Chicago, Boston, Detroit, New York, Cleveland, and Philadelphia.⁴⁸ These areas suffer from some of the most severe stormwater pollution problems in the nation. (Even more cities would be excluded if 1990 Census data were used.)

EPA's judgment was affected by its concern over workload:

The need to establish a reasonable number of permits . . . during the initial phase of program development that will provide an adequate basis for a storm water quality program for over 13,000 municipalities after the October 1, 1992 general prohibition on storm water permits expires.⁴⁹

Congress was concerned about the number of municipal permits. But it expressly addressed this concern in two ways. First, in section 402(p)(3)(B)(i), it allowed municipal storm water permits to be issued on a "system- or jurisdiction-wide basis," rather than for every storm water outfall.⁵⁰ Second, Congress phased in municipal permitting requirements according to population.

EPA limited storm water permits to portions of counties in "urbanized areas," as defined by the Census Bureau. While density is one valid criterion to distinguish between the severity of stormwater problems, according to EPA's own data the Census Bureau's definition is inappropriate. The Census Bureau defines "urbanized areas" according to a complex definition which includes, as one factor, density of at least 1,000 persons per square mile.⁵¹ Whatever its reasons for selecting this criterion, the Census Bureau did not consider the appropriate density cutoff for weighing storm water runoff.

NURP, the most comprehensive study of urban storm water, indicates that a far lower density cutoff is appropriate. NURP indicates that a density of approximately one person per acre, or 640 persons per square mile, is the appropriate cutoff for storm water runoff concerns.⁵² Many of the nation's largest suburban areas were excluded from first-round permits under this reasoning.⁵³

Even more irrational was EPA's decision to *exclude* portions of counties covered by EPA's initial rule that consist of incorporated places with populations lower than

the statutory cutoffs. EPA even excluded whole counties that otherwise would meet the population cutoff and "urbanized area" requirements if most (all but 99,999 or fewer) of the residents lived in incorporated places with populations lower than 100,000.⁵⁴

These exceptions generated anomalous and illogical results:

(1) The rule covers a county with "urbanized" areas and a population of slightly more than 100,000, but without any incorporated places; but it would cover a county with urbanized areas and a population of one million, most of whom reside in a series of adjacent incorporated places each of which is smaller than 100,000. This scenario is typical of many suburban areas that are highly developed, but are comprised of a large number of incorporated places each of which is smaller than 100,000. This explains why such densely-populated suburban counties as Nassau County, Long Island; Cook County, IL; and San Mateo and Santa Clara Counties, CA are not included in EPA's rule. These areas include contiguous, densely-populated incorporated places each of which is below 100,000 people.

(2) The rules cover some parts of a county with a million people and "urbanized areas," but exclude from coverage some of the most densely-populated portions of those counties, i.e., those parts within incorporated places of less than 100,000 people.

Even EPA's own recent stormwater literature points out the need to expand the scope of regulation to additional urban areas:

"The 220 Phase I NPDES municipalities have a combined urban population of 78 million. The remaining 80 million people located in urbanized areas are outside of Phase I municipalities. Most urban growth occurs in the urban fringe areas outside of core cities. For example, between 1970 and 1980, the population of incorporated cities with a population of 100,000 or more (Phase I cities) increased by only 0.6 million, with the population of many of these cities decreasing. Between 1970 and 1980, the population of urbanized areas outside of cities with a population of 100,000 or more increased 30 times more (an increase of 18.9 million) than the population of these core cities. This is important from a stormwater perspective as numerous studies (e.g., NURP) have shown that *it is much more cost effective to develop measures to prevent or reduce pollutants in stormwater during new development than it is to correct these problems later on.*"⁵⁵

Thus, there are as many large urban areas currently outside of the NPDES stormwater permitting system as there are cities beneath the NPDES umbrella. This "regulatory gap," as the quote from EPA above makes clear, is all the more crucial considering that the areas left out of the NPDES umbrella are experiencing the most rapid growth rates, and thus have the most urgent need for immediate establishment of water-sensitive master plans and site design practices, before excavation and building ever begin.

(b) Absence of Substantive Requirements

Most of the municipalities that have now applied for their initial permits (Part I) have conducted stormwater pollution studies to develop city-wide stormwater management programs (Part II). However, because EPA has not provided substantive performance targets (such as the minimum urban area that must be covered by well-accepted stormwater management measures) for the permits, urban citizens and stormwater utility ratepayers may have little or no assurance of permit program accountability and effectiveness.

In section 402(p)(3)(B), Congress clearly intended to provide a new substantive standard for storm water control from municipal sources. But a *new* standard is far different from *no* standard. The Legislative History confirms that municipal storm water sources must be subject to defined minimum controls.⁵⁶

Congress cited the need for EPA to develop detailed substantive programs for municipal storm water control as the primary reason for the temporary exemption of storm water from NPDES permitting. In explaining the Conference provision on the Senate Floor, Senator Stafford explained why he reluctantly supported a delay in the municipal storm water program:

I would like to explain to my colleagues why a little more time is needed to develop a comprehensive municipal storm sewer program. These programs will not necessarily be like industrial discharge permits. Often, an end-of-pipe treatment technology is not appropriate for this type of discharge. As an EPA official explained during a meeting of the conferees:

These are not permits in the normal sense we expect them to be. These are actual programs. These are permits that go far beyond the normal permits we

would issue for an industry because they in effect are programs for stormwater management that we would be writing in these permits.

As my colleagues know, I generally do not support willingly any delays in environmental programs, especially a program to control a source of toxic pollutants as important as this one is. EPA should have developed this program long ago. Unfortunately it did not.⁵⁷

This same expectation is noted in the Conference Report itself:

. . . the conference substitute temporarily prohibits the Environmental Protection Agency and States from requiring permits for certain municipal separate storm sewers . . . in order to provide a sufficient period of time to develop and implement methods for managing and controlling discharges from municipal storm sewers.⁵⁸

Thus, Congress reluctantly accepted four years of delay largely to allow EPA sufficient time to develop a comprehensive new municipal storm water program. In its final regulation, however, EPA failed to provide any substantive, prescriptive requirements for municipal storm water management programs.⁵⁹ As a result, EPA's regulations are almost entirely vague, and there are virtually no hard criteria by which to judge the adequacy of municipal storm water permits and programs. Nor do municipal applicants have a clear target to shoot at when they prepare their permit applications.⁶⁰

Thus, rather than meeting its commitment to Congress to take advantage of the temporary reprieve granted by section 402(p) to develop comprehensive municipal storm water control programs, EPA punted its responsibility to municipalities around the country. These applications will be reviewed by individual NPDES permit-writers (who themselves will have no guidance in the regulations to decide which applications propose adequate programs), and will result in vastly different requirements, inconsistent water pollution control and potentially severe inequities in costs and water quality among communities.

NRDC agrees that storm water programs should reflect comprehensive regional programs of structural and nonstructural approaches. A single, rigid set of criteria and performance standards would be impractical and unwise. However, the need to provide for flexibility does not obviate the duty to provide a minimum set of performance standards that will realize Congress' goal of establishing programs that reduce storm water pollution to the maximum extent practicable.⁶¹

EPA's own statements underscore the need for municipal storm water permits to provide for sufficient uniformity in pollution reduction to achieve the goals of the Act. EPA's response to comments on its draft rule under 402(p) states:

EPA agrees that as much flexibility as possible should be incorporated into the program. *However, flexibility should not be built into the program to such an extent that all municipalities do not face essentially the same responsibilities and commitment for achieving the goals of the CWA.*⁶²

EPA's completely open-ended, non-substantive municipal storm water permit application requirements at best will result in haphazard, unpredictable, and unenforceable storm water pollution control programs, and at worst will result in a collection of "paper programs" with no ultimate reduction in storm water pollution.⁶³ Minimum standards for acceptable storm water control programs are feasible. This is strongly suggested by EPA's own finding that urban storm water discharges around the country are surprisingly similar.

NURP and other studies have verified that even mean concentration of pollutants in urban runoff from residential and commercial areas remains relatively constant from one area to another. . . .⁶⁴

NRDC suggested several options for such controls in comments on the proposed rule, drawing from the experience of state and local storm water programs around the country. Various kinds of performance standards for runoff pollutant reduction, and control of the stormflows themselves, are technically feasible and in many cases are in place at the State and local level around the country. Data on the pollutant reductions achievable by various Best Management Practices are available from well-known sources, including EPA's final NURP report, which included BMP performance data from studies of fourteen wet detention basins in six cities, and a 1987 urban runoff BMP manual from the Washington Metropolitan Council of Governments.⁶⁵ At least five states have storm water control and water quality laws that contain substantive storm water control requirements for various categories of urban land use and development.

There are several ways that flexibility in storm water programs can be maintained, while still providing substantive pollutant reduction standards for storm

water that will ensure that all permittees have essentially the same commitment to achieving the goals of the Act. Flexibility can be maintained, for example, by establishing separate performance standards for each of the climate regions in the United States designated by EPA,⁶⁶ to address variations in urban runoff characteristics linked to variations in precipitation patterns.

EPA can provide additional flexibility in its municipal storm water permitting guidelines by providing States and permit writers with a choice of several different types of performance standards for runoff control programs. There are at least four different categories of performance standards, and all have examples in current State and local programs:

- *Required Best Management Practices (BMPs)*, possibly a region-specific, mandatory menu of BMPs which each municipality must implement as a permit condition. Considerable information exists on the performance characteristics of various BMPs, on which EPA can base its choices for the list of required BMPs. Not all permittees have to choose the same BMPs, but they must choose an adequate number from EPA's menu. An example of a BMP requirement is the District of Columbia's rule mandating installation of an oil and grease treatment device for "storm water discharge facilities." Examples of mandatory BMP programs are also provided by State and local erosion and sediment control laws around the country.
- *Pollutant reduction performance standards*, which establish minimum pollutant reduction levels as a percent of annual baseline raw runoff loadings, based on analyses of the engineering and municipal program literature. Maryland's Critical Areas Act contains a pollutant reduction performance standard for redevelopment and new development in the regions within the State's Critical Area that are designated "Intensely Developed Areas." The runoff performance standard requires that these developments install runoff controls that will achieve a post-development pollutant loading that is ten percent below the pre-development loading from the site.⁶⁷ The Maryland Critical Areas Act also Provides EPA with methods for applying the "keystone pollutant" concept, and baseline loading estimates, both of which are useful in applying runoff pollutant reduction performance standards.
- *Service area performance standards*, which establish a minimum percentage of a permittee's total area, or total impervious area, to be serviced by pollutant reduction BMPs. EPA could determine the total percentage of watershed drainage area that must be served by retrofit BMPs in the watershed, as well as by BMPs installed concurrently with new developments, and use these figures to set "minimum area served" performance standards for urban runoff controls.
- *Flow/Hydrological performance standards*, which may establish retention requirements in several different ways: minimum design storm capture, downstream peak discharge control, or minimum runoff flow capture. State policies have been aimed at achieving pollutant reduction, and at maintaining or approximating the natural flow regimes of the receiving streams.

Florida requires storm water permit applicants for areas of 100 acres or less to provide for the retention, or detention with filtration, of the first one-half inch of runoff, or of the first one inch of rainfall, whichever is greater. For areas greater than 100 acres, the performance standard consists of mandatory treatment of runoff from the first one-inch of rainfall.⁶⁸

No single one of these proposals is necessarily the only correct approach. But EPA had ample options from which to choose, and had no excuse for choosing none.

The concept of "pollution prevention," a congressional mandate under the Pollution Prevention Act of 1990, provides a particularly attractive approach for establishing meaningful but flexible requirements for the Clean Water Act stormwater program, through the following runoff prevention and reduction hierarchy:

- 1) for new development: runoff prevention through mapping and preservation of natural drainage ways, preservation of mature forest zones along waterways, and caps on the amount impervious surface;⁶⁹
- 2) for redevelopment and retrofitting of existing developed areas: runoff reduction through revegetation, impervious surface reclamation (e.g. retrofitting parking lots with grass swales designed to capture and filter the lot's runoff, thus preventing or severely reducing the need to discharge to a nearby stream);
- 3) chemical source controls and toxics use reduction (e.g. policies that require lawn service companies to test lawns for nutrient content and pest problems before applying chemicals, in order to reduce lawn chemical use); and
- 4) conventional "end-of-pipe" stormwater treatment devices, such as extended detention ponds, infiltration trenches, and catch basins.

This "stormwater policy hierarchy" in turn could be incorporated into a comprehensive watershed restoration program that highlights the importance of urban waters to inner-city dwellers, relies on local citizen groups and municipalities to initiate and structure long-term restoration strategies (that may include community-based studies like surveys of urban fishing patterns, and locally-based skilled jobs like urban forestry), and channels federal dollars to priority urban watersheds to help fund the restoration work.⁷⁰ Such a program would help to focus the energies of urban activists into the work of "re-greening the urban landscape," enshrining this ecological goal as a critical part of the Clean Water Act's goal of "fishable, swimmable", waters for all Americans.

4. SECTION 402 OF S. 1114 EXACERBATES RATHER THAN SOLVES PROBLEMS WITH THE STORMWATER PROGRAM

While S. 1114 attempts to resolve many of the problems with the current municipal stormwater program, it fails to do so effectively in some cases, and takes us dramatically in the wrong direction in others. In particular, the bill:

- 1) *relies on the CZARA urban runoff measures in defining Maximum Extent Practicable, which means that the current "write-your-own" permit approach will be largely continued;*
- 2) *exempts cities and urban/suburban counties under 100,000 population that are not within a much larger jurisdiction; and*
- 3) *exempts even the permitted municipalities from either numeric limits, or compliance with water quality standards, for the first two permit terms, meaning that the permits will remain largely unaccountable to larger ecosystem restoration goals, including the most fundamental goals of the Clean Water Act.*

Below, we explain these problems in more detail, and provide specific proposed amendments to fix them.

PROBLEM #1: Reliance on the CZARA urban runoff measures in defining Maximum Extent Practicable means that the current "write-your-own" permit approach will be largely continued; little will be provided in the way of a specific, national "technology floor" for urban stormwater permits.

"CZARA" stands for the Coastal Zone Act Reauthorization Amendments of 1990. This new program is a blend of two programs that have focused on land-based sources of water pollution: Clean Water Act Section 319, and the Coastal Zone Management Act. CZARA required EPA to work with the National Oceanic and Atmospheric Administration to come up with guidance to the States in regulating polluted runoff from land uses known to degrade coastal waters. One of the results of this new mandate is a thick technical tome published by EPA on runoff "management measures," known as the "Blue Book," this guidance contains management measures for agriculture, urban developments, and other land uses.

Although the concepts embodied in the management measures are sound, they are often too weak because they are too vague, general, and lacking in performance standards to guide their implementation by both States and landowners. The management measures are usually followed by laundry lists of site-level practices. These practices are the nitty-gritty, on-the-ground actions that landowners need to take to protect water quality. But because the actual practices are voluntary, ensuring that the management measures get implemented, and backing them up with enforcement procedures, will be a Herculean and thankless task for many State water quality agencies.

The CZARA technical guidance has five categories of management measures that specifically relate to controlling runoff from urban areas: New Development; Construction; Existing Development; Onsite Disposal (septic) Systems; and Roads, Highways and Bridges. We discuss the New Development and Existing Development measures in detail below. The onsite disposal measures contain some objective performance standards; neither the "Construction Activities," nor the "Road, Highway and Bridges" measures contain objective standards.

The Existing Development Management Measure requires that "watershed management programs" be developed to reduce runoff in four ways:

- 1) "identify priority local and/or regional watershed pollutant reduction opportunities, e.g. improvements to existing urban runoff control structures;"
- 2) "contain a schedule for implementing appropriate controls;"
- 3) "limit destruction of natural conveyance systems;" and
- 4) "where appropriate, preserve, enhance, or establish buffers along surface waterbodies and their tributaries."

Each of these items are important elements of any stormwater management program, and should be included in NPDES permits. However, in and of themselves,

they contain no objective means of determining effectiveness in reducing existing runoff loadings. No quantitative performance standard determines the scope of their application in each permitted jurisdiction. For instance, while the exhortation to "limit destruction of natural conveyance systems" is laudable, the degree to which it should be applied by each permittee is unspecified.

Similarly, element #1, "identify . . . improvements to existing . . . control structures" is extremely vague, and lacks a means to verify whether each permittee has satisfied its intent. If the intent is to require each urban area to install a minimal number of detention ponds, infiltration trenches, constructed wetlands, or other "retrofit" devices, then the measure should have specified a quantitative minimum for these devices. For instance, the measure could have specified that "improvements be made to a minimum of 50% of the permittee's existing stormwater control structures." Instead, a permittee could conceivably have a permit under this proposal that reads "retrofit [a few] [several] [five to ten] stormwater devices per year," in an area that has a thousand devices awaiting a retrofit.

Without some form of quantitative or otherwise objectively verifiable performance standard attached to the management measures, it is difficult if not impossible for the permitting authority, or citizen water watchers to ascertain whether Congress' intent, and the letter of the law, is being met.

The Pollution Prevention Management Measure requires that "prevention and education" programs be developed to address the following urban runoff sources:

- 1) household hazardous chemicals;
- 2) lawn and garden activities;
- 3) turf management on golf courses, parks, and recreational areas;
- 4) discharges into storm drains;
- 5) commercial activities including parking lots and gas stations; and
- 6) improper disposal of pet excrement.

While these are important source categories for urban runoff, no specific activities ("practices") are required. Thus, if a local government sends a "pesticide use reduction education" brochure to golf courses in its jurisdiction, does that satisfy the golf course portion of the management measure? If so, there is no guarantee that actual water-sensitive practices will be installed on any golf course in this example, only that some kind of education take place. While education is an important part of runoff reduction programs, it must be accompanied by specific kinds of runoff reduction practices in order to be effective.

CZARA Measures Pertaining to New Development

Virtually everyone in the stormwater management field agrees that an ounce of prevention is worth a pound of cure—that it makes sense to require stormwater management site designing as part of the suburban/urban development zoning and planning process.

There are three measures related to new development in the urban chapter of EPA's CZARA Technical Guidance. These are: 1) "New Development"—which contains a single numeric standard, namely, an 80% reduction in total suspended solids loadings on an annual basis is required for the post-construction phase for new developments; 2) "Watershed Protection"—which contains no objective standards for implementation; and 3) "Site Design"—which contains no objective standards for implementation.

As NRDC commented to EPA on the draft version of this guidance last summer, these measures are conceptually correct, but they have the effect of promoting an end-of-pipe, rather than a prevention mentality for stormwater. By requiring a numeric standard only for total suspended solids, EPA is, in effect, pushing developers to install stormwater "physical devices" like detention ponds and infiltration trenches, which constitute "end-of-pipe" treatment devices.

By including the good concepts of watershed protection and site design, but requiring no objective, verifiable performance standard to back them up, EPA is virtually guaranteeing that business as usual will continue unabated and unchallenged.

NRDC's study of two counties that have had new development stormwater management requirements implemented since the mid-1980s demonstrates the futility of the kind of end-of-pipe controls that the EPA CZARA measures will (inadvertently) promote.⁷¹ In this study, of Prince George's and Montgomery Counties, Maryland, we found, for example, that estimated phosphorus loadings from the two counties had increased by 20% by 1990 above the level of 1985—despite the fact that end-of-pipe stormwater treatment devices were assumed to have been installed, and working up to literature performance levels—in all new developments.

The implication of this stormwater management study is clear: without planning-level controls that include progressive transportation planning to reduce the

amount of new imperviousness and the number of vehicle-miles, and natural drainage way preservation and other "design with nature" approaches—"stormwater mitigation" devices will not serve to adequately protect waters of the U.S. from the effects of suburban sprawl.

Furthermore, NRDC and others have shown that simple "new development stormwater requirements" are not enough—legislation must provide some specifics to the effect that imperviousness shall be minimized (with numeric caps, at least on a watershed basis) . . . and that natural drainage ways shall be preserved as part of the stormwater management planning and design. The research by NRDC cited above suggests that suburban sprawl, even when it incorporates stormwater management devices, creates significant additional nutrient loadings that can overwhelm, or cancel out, any gains made by controls on other sources, for instance, tertiary sewage treatment.

Remedy: Amend S. 1114 proposal to specify a short list of universally-applicable urban management measures, to include the following, and require EPA to establish quantitative or otherwise verifiable criteria for their implementation, for inclusion in all municipal stormwater permits:

- 1) parking lot retrofits to capture, attenuate, and/or filter runoff;
- 2) new development controls specifying numeric caps on imperviousness and numeric floors on vegetation preservation, and that preserve all natural drainage ways;
- 3) public education with target populations, frequency of outreach, and other specifics required;
- 4) minimum percentage of existing flood-control devices within each permittee's jurisdiction to be retrofitted for stormwater quality benefits;
- 5) chemical source controls including gas station measures and practices;
- 6) mandatory planning coordination between stormwater managers and transportation and land use planners;
- 7) illicit discharge program with an objectively verifiable conveyance system surveying and discharge elimination protocol (e.g. require use of dry weather sampling at a minimum number of outfalls, require CCTV use in a minimum percentage of conveyance pipelines etc.);
- 8) other measures, including region-specific measures as deemed appropriate.

There are many standard urban runoff manuals available that demonstrate the feasibility of standard management measures nationwide, for mitigating and abating runoff from existing development. These include: the 1992 *Stormwater Management Manual for the Puget Sound Basin*, published by the Washington State Department of Ecology; the Minnesota Pollution Control Agency's 1989 Best Management Practice Manual entitled *Protecting Water Quality in Urban Areas*; and the 1993 *California Storm Water Best Management Practice Handbooks*, published by the California Storm Water Quality Task Force.

PROBLEM #2: Exemptions for smaller cities and urban/suburban counties under 100,000 population that are not within a much larger jurisdiction. This provision targets the "pocket" or "enclave" municipalities (those within larger urban cities or counties) for inclusion in permits, while leaving all others unregulated, including many of our largest, most rapidly growing suburbs.

According to a report from EPA on the environmental impacts of stormwater discharges:

. . . it is much more cost effective and institutionally feasible to develop controls for new development than it is to retrofit old development.⁷²

Furthermore, the same report states that:

Urban fringe areas are experiencing the largest land use changes due to rapid growth in population resulting in an excessive net increase in pollution loadings. Many of these fringe areas are not currently covered under the Phase I NPDES stormwater program.⁷³

EPA's current policy of exempting the "urban fringe areas," including many of the counties and cities undergoing the most rapid growth in the country, from the stormwater permitting regulations, is left largely unchanged by the Baucus-Chafee bill. To further quote from the EPA report cited above,

Under Phase I [the issuance of permits to the large and medium municipalities], EPA defined municipal separate storm sewer systems on the basis of political boundaries, including 173 incorporated cities (having a population of 100,000 or more) and 47 of 500 counties having an unincorporated population of 100,000 or more. The counties that were addressed by the 11/16/90 regulation were in a handful of States, primarily MD, VA, FL, and CA. *While the current regulations*

indirectly address suburban growth in these States, in most parts of the country, the regulations only address core cities and exclude suburban or "urban fringe" development." (Emphasis in original.)⁷⁴

By exempting many small cities, as well as rapidly-growing counties, from stormwater permits, the Baucus-Chafee bill misses the best opportunity to implement pollution prevention measures now—so that we can avoid much higher retrofit/mitigation costs later.

In addition, the wholesale exemption of smaller, stand-alone urban areas means that existing stormwater problems will not be corrected. The Nationwide Urban Runoff Program (a joint study of 28 urban areas conducted in the early 1980s by EPA and USGS) data shows that site-to-site variability in runoff quality is highly difficult to predict. To quote from the NURP conclusions:

As a result of extensive examination, it was concluded that *geographic location, land use category . . . or other factors . . . appear to be of little utility in consistently explaining overall site-to-site variability in urban runoff . . .*" (emphasis added).⁷⁵

This conclusion means that, as a general rule, the quality of runoff—its relative degree of contamination—was not found to vary in any discernible pattern from location to location. Thus, it is not possible to conclude, from currently-available, comprehensive studies, that small cities' runoff quality is different from large cities' runoff.

The Baucus-Chafee "small municipality" provision has the benefit of including the "urban enclaves" within pre-existing permits—for instance, those incorporated cities and towns within counties already captured by the "large or medium" (100,000 and above population) permitting category. Since urbanization patterns vary around the country, in some regions the Baucus-Chafee "small city" policy may capture most of the key urban areas in the region. In other regions, this will not be the case, and *the Baucus-Chafee proposal will have the effect of leaving the polluted runoff of significant urban areas unregulated. As one stormwater policy expert has observed:*

The patterns and functions of local governments in suburban fringe areas vary from State to State. In some States, such as MD, VA, FL and CA, and, to a lesser degree, a number of southern States and TX, large urban populations outside of core cities are in unincorporated portions of counties. In these cases, the county government conducts the major functions of local government. However, in most States, including New England, Mid-Atlantic, Great Lake, Mid-western, and most Western States, the primary form of local government for many municipal functions is not a county but either an incorporated place or a minor civil division.⁷⁶

This observation points to the need to expand the scope of permitted municipalities far beyond the urban "enclaves" that exist in a few states. In the many regions listed in the quote above that do not follow the "County-dominated" urbanization pattern, the mere capture of small municipalities only when they are in urbanized areas within already-permitted (large and medium) municipalities, will exempt significant sources of urban polluted runoff, including already-developed urban areas and rapidly-growing urban areas.

THE REMEDY: Delete the exemption for urban areas of less than 100,000 people outside currently-permitted areas, and provide less drastic relief through authority for general permits or county-wide permits.

We recognize the administrative burdens that stormwater permitting imposes on federal and state permit-writers, and the cost of stormwater permitting for smaller cities who lack the same access to financial and technical resources as larger cities. The answer to this problem, however, is not simply to "write off" water quality in urban areas. Instead, it is to find more efficient ways to bring smaller cities into the stormwater program in a cost-effective manner. Two options could be explored as a more rational and cost-effective approach to stormwater permits for smaller cities in ways that give appropriate attention to serious environmental problems caused by polluted urban runoff:

(1) EPA or states could be authorized to develop a general permit for smaller cities, perhaps with variations by hydrologic region, rather than requiring smaller jurisdictions to submit individual stormwater permits. Such general permits can draw on the extensive information submitted by larger municipalities, on a region-specific basis, as part of existing stormwater programs.

(2) Cities under 100,000 could be included within a single, areawide stormwater permit for the next largest governmental size (county, borough, township, parish,

etc.), as appropriate to the political structure in individual states). This would allow smaller cities to take advantage of appropriate economies of scale, and would reduce substantially the permitting burden on EPA and state officials.

PROBLEM #3: Exempting permitted municipalities from either numeric limits, or compliance with water quality standards, for the first two permit terms.

Especially given the absence of any objective, verifiable technology-based floor for stormwater controls, exempting stormwater permits from numeric permit standards and compliance with water quality standards leaves the program with no accountability whatsoever. This proposal casually tosses away one of the most fundamental principles in the Clean Water Act—compliance with the water quality standards designed to assure waters that are fishable and swimmable—and leaves nothing in its place. This suggestion will be met with serious objections from water quality activists around the country who rely on water quality standards and enforceable numeric permit limits as the most basic Clean Water Act tools and objectives.

A limited-term, explicit exemption from meeting water quality standards in municipal stormwater permits should not even be considered unless it will be replaced with an explicit, acceptable list of applicable management measures, along with other stringent permit-writing guidance to help ensure that a national "technology floor" is established for the permits. While even this would constitute a significant weakening of existing law, at least it would trade one enforceable current set of requirements with another that is less burdensome on permittees and permit-writers, but potentially more effective in resolving the real-world problems caused by urban stormwater runoff.

REMEDY: There are two potential options to fix this problem: 1) eliminate this provision entirely from the bill; leave numeric limits and WQS compliance to drive better, more ambitious urban stormwater programs; or, 2) specify that, while numeric effluent limits are not required at this time, minimum technology-based performance standards discussed above must be employed, and municipal permits shall be designed to reach water quality standards compliance in the receiving waters in the second and all subsequent permit terms.

B. Combined Sewer Overflows

Combined sewer overflows (CSOs) are discharges of raw (untreated) human sewage mixed with stormwater runoff, and often with industrial wastes, which occur during storms because older sewer pipes carrying both stormwater and raw sewage become overloaded. During overflows the foul mixture is diverted from the sewage treatment plant at overflow points and is discharged directly into our rivers, lakes and coastal waters.

The CSO problem is a big one. EPA estimates that over 1,100 collection systems in the United States, "serving" approximately 40 million people, have combined sewer systems.⁷⁷ Of those, 328 systems serving about 25 million people had documented needs for wastewater treatment control as of 1988.⁷⁸ The documented price tag to fix these problems totaled \$16.4 billion in 1988 dollars.⁷⁹ Over half of these CSO needs are located in marine and estuarine systems which "serve" approximately 12 million people.⁸⁰ Thus, while the number of systems around the country which have CSOs is relatively small in comparison to the total number of sewage treatment systems (approximately 1100 out of over 24,000 collection and treatment systems),⁸¹ the affected systems serve nearly 16% of the nation's population.⁸²

A number of large U.S. cities have significant CSO problems. A 1992 NRDC study showed that over 165 billion gallons of raw sewage mixed with polluted stormwater and industrial discharges are discharged into surface' waters by 14 large cities with combined sewer systems:

ESTIMATED ANNUAL COMBINED SEWER OVERFLOW RELEASES FROM 14 U.S. CITIES

City	Gallons	Sediments	Organic wastes (pounds)	Copper	Lead	Zinc
Atlanta	5.3 bil	1.5 mil	5.5 mil	4,500	15,000	15,000
Boston	5.2	9.4	4.3	3,900	7,900	11,000
Bridgeport	1.7	1.1	0.4	1,500	4,900	5,000
Chicago	27.0	10.0	6.9	21,000	4,400	144,000
Cleveland	5.9	26.0	4.7	6,700	9,200	12,000

ESTIMATED ANNUAL COMBINED SEWER OVERFLOW RELEASES FROM 14 U.S. CITIES—Continued

City	Gallons	Sediments	Organic wastes (pounds)	Copper	Lead	Zinc
Mn.-St. Paul.....	1.6	2.5	0.7	800	1,500	3,500
Narragansett.....	2.6	3.5	2.3	3,000	1,700	7,000
New Bedford.....	1.1	1.7	0.5	1,000	3,300	3,300
NYC.....	84.0	83.0	38.0	71,000	240,000	240,000
Phila.....	20.0	23.0	17.0	17,000	58,000	58,000
Richmond.....	4.1	9.1	2.5	3,500	12,000	12,000
San Fran.....	1.7	1.8	1.5	1,500	4,900	5,000
Seattle.....	2.9	2.8	1.5	2,100	4,200	5,400
D.C.....	2.2	5.4	0.9	1,900	5,500	5,200
Total.....	165.3	194.3	86.7	223,200	372,500	525,400

SOURCE: NRDC, "When It Rains It Pollutes" (April 1992).

The quantity and range of pollutants discharged by CSOs are significant. While precise figures are not available due to a shortage of monitoring data, the following estimates can be made:

- Total suspended solids in CSO discharges can range from roughly 400 to 700 milligrams per liter—which is roughly two to three times the suspended solids concentration of "normal" raw sewage.⁸³
- Biological Oxygen Demand (a measure of the organic material in water that can rob aquatic life of oxygen) ranges in concentration in CSOs from roughly 80 milligrams per liter to 150 milligrams per liter.⁸⁴ (In comparison, the effluent from a sewage treatment plant is required to meet a 30 day average discharge standard of 30 milligrams per liter.⁸⁵)
- Fecal coliform counts in CSO discharges can range from 200,000 to over 1,000,000 per 100 milliliters.⁸⁶ (In comparison, many States recommend that bathing be restricted at beaches where fecal coliforms exceed 200 per 100 milliliters.⁸⁷)

Very little information is available on the toxic pollutants discharged by CSOs. However, since twelve percent of the total flow to sewage treatment plants nationwide consists of industrial wastewater,⁸⁸ industrial toxics are likely to be present in significant quantities in CSO discharges; industrial flow to these systems receives no treatment at the POTW during overflow events. And as discussed above, urban stormwater runoff, which makes up the bulk of total volumes of CSO discharges, also contains numerous toxic pollutants including heavy metals, oil and grease and organic chemicals.

While major progress has been made in the past decade in achieving a minimum level of secondary treatment for municipal POTW discharges, the CSO control program has lagged far behind. One principal reason is that, while CSOs have been eligible for some portion of construction grant financing, relatively few of these Federal funds actually have been available for CSO abatement. The magnitude of CSOs' contribution to water quality problems also may have been obscured to some degree by sewage treatment plant discharges 'until the secondary treatment program was well on its way.

Either because EPA did not wish to press the States to take action on CSOs when the agency lacked a major federal grants program to assist them, or because it had other priorities, until recently EPA did very little on a national level to bring CSO discharges under control. Although EPA maintains that CSOs are subject to BAT standards, EPA did not draft a national categorical standard for CSO discharges but instead has left State or Regional permit writers no alternative but to rely upon their best professional judgment (BPJ) for CSO permitting.

In August of 1989, EPA did publish a National Combined Sewer Overflow Control Strategy. The Strategy called upon all States (or EPA where it is the permit-issuing authority) to develop and submit to the agency, by January 15, 1990, a statewide permitting strategy for CSO controls. The permitting strategy requires that the responsible entity do the following:

1. Identify communities with CSOs, including each CSO point, and determine whether the CSOs are subject to permits and, if so, whether they are in compliance with applicable standards;
2. Set priorities for achieving compliance, and describe how compliance will be achieved (including descriptions of the nature of control measures to be applied);
3. Issue permits (where possible, on a system-wide basis rather than for individual outfalls) for each CSO system. Permits are to include monitoring requirements and permit reopener clauses based on results of the testing; and
4. Establish compliance schedules in those instances where statutory deadlines cannot be met, using administrative enforcement orders or other legal enforcement tools.

The CSO Strategy gave extremely limited guidance as to what constitutes BAT, the minimum level of technology required under EPA's interpretation of the law: proper operations and maintenance; maximum use of the sewer collection system for storage; pretreatment program revisions to minimize CSO impacts; maximization of the POTW's capacity to accept storm flows; prohibitions on dry weather overflows; and control of solids and floatables. The Strategy also notes that, where water quality standards are not met, additional controls must be placed on discharges. But it still leaves it to individual permit-writers to decide what will actually be required to control each CSO permittee.

According to EPA, 30 strategies had been received from the States and Regions as of July 20, 1992, all of which have been approved; another 5 states have combined sewers, but claim they need no strategy.⁸⁹ Meanwhile, recognizing the inadequacy of the existing permitting strategy, EPA committed to issuance of a revised, hopefully stricter policy.

During the summer and fall of 1992 EPA convened a policy dialogue in which representatives of cities, states and environmental groups attempted to reach consensus on a new CSO permitting strategy. While the parties did not reach full consensus on this strategy, a joint framework for a new strategy ultimately was presented to EPA: Building on this framework, in late December EPA released for public comment a new Draft CSO permitting strategy.⁹⁰ In this proposal EPA added the following to the six earlier minimum controls: pollution prevention (including water conservation), public notice of waters affected by CSO discharges, and adequate monitoring. In a major step forward, however, the new strategy proposes a menu of minimum technology-based controls from which cities may choose.⁹¹ In addition, the proposal would require relocation or elimination of releases to sensitive waters wherever feasible.

NRDC strongly supports the incorporation by reference of this compromise CSO strategy in S. 1114 (although the Committee should incorporate into its final bill the more comprehensive beach protection elements of S. 997 as well).

CONCLUSION

We appreciate this opportunity to testify on the funding and other municipal aspects of Clean Water Act Reauthorization. We look forward to working with the Committee on these and other issues as these hearings proceed, and during Committee and Subcommittee markup. I would be happy to answer any questions at this time.

ENDNOTES

1. NRDC is a nonprofit environmental advocacy organization with over 170,000 members and supporters nationwide. NRDC has been involved in Clean Water Act issues for more than 20 years.

2. This testimony is presented on behalf of NRDC and the American Oceans Campaign, but is consistent with the National Agenda for Clean Water endorsed by all Clean Water Network groups.

3. EPA, *National Water Quality Inventory, 1990 Report*, 134.

4. World Resources Institute (WRI), 1992, *World Resources 1992-1993*, 167.

5. Council for Environmental Quality (CEQ), 1990. *21st Annual* 303, 309.

6. CEQ, *21st Annual Report*, 309.

7. CEQ, *21st Annual Report*, 309.

8. Patrick, Ford, and Quarles, 1987. *Groundwater Contamination in the United States*, University of Pennsylvania Press, 2nd Ed., 61-63.

9. EPA, *National Water Quality Inventory, 1990 Report*, 135-36. These numbers derive from EPA's "Needs Surveys" for sewage treatment plant construction. Interestingly, EPA's 1980 Needs Survey showed remaining sewage treatment needs of \$119 billion—not much higher than

- the 1990 report. Pollock, Lynne M., "Financing Under the Clean Water Act: The Move from Federal Grants to State Loans," 84 *Water Resources Update* (Winter 1991), 25.
10. National Water Education Council, 1992. *Cause for Concern: America's Clean Water Funding Crisis*, Jonathan C. Kaledin, ed., 12.
11. National Association of Flood and Stormwater Management Agencies, 1992. *Municipal Separate Storm Sewer System Permit Application Costs*, 1, 5.
12. Center for Resource Economics, 1992. *Analysis of Environmental Protection Funding*, Report to the House-Senate Conference on the 1993 VA, HUD, Independent Agencies Appropriations Act, 11.
13. Letter from Roberta H. Savage, Executive Director, Association of State and Interstate Water Pollution Control Administrators, to Honorable Max Baucus, Chair, Senate Environment Subcommittee, December 23, 1991, 2; Statement of Bill Frank, Jr., Chair, Northwest Indian Fisheries Commission, before the House VA, HUD, Independent Agencies Appropriations Subcommittee, May 1, 1991, 1.
14. National Water Education Council, *Cause for Concern*, 3, 29.
15. U.S. Environmental Protection Agency (EPA), 1990. *Environmental Investments: The Cost of a Clean Environment—A Summary* (Office of Policy, Planning, and Evaluation, EPA-230-12-90-984), 4-4 to 4-5.
16. Smith, Marguerite T.; and Debra Wishik Englander, 1991. "The Best Places to Live in America." In: *Money*, Volume 20, Number 9, (September 1991), 140.
17. Roper Organization Inc, 1992. *Natural Resource Conservation: Where Environmentalism is Head in the 1990s*, The Times Mirror Magazines National Environmental Forum Study, 5, 8.
18. O'Connor, Bord and Fisher, 1992. "Fresh Water Quality, Quantity, and Availability, American Public Perceptions," Pennsylvania State University (prepared for the National Geographic Society).
19. O'Connor, Bord and Fisher, "Fresh Water Quality," Figure I.
20. EPA, *The Cost of a Clean Environment*, vii, 2-6.
21. National Utility Contractors Association, 1992. *A Report on Clean Water Investment and Job Creation*, Apogee Research, 6.
22. Memorandum from Dennis King, Associate Director, Maryland International Institute for Ecological Economics, to William Painter, Chief, Water Policy Branch, Office of Policy, Planning and Evaluation, U.S. EPA, November 30, 1992.
23. National Research Council, 1992. *Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy* (Washington, D.C., National Academy Press).
24. U.S. Environmental Protection Agency (EPA), 1992. *The National Estuary Program After Four Years. A Report to Congress*, 1-4. Three of these estuaries are on the West Coast, 4 in the Gulf of Mexico, and the rest on the East Coast. *Id.*
25. EPA, *The National Estuary Program After Four Years*, 9. And: EPA, *National Water Quality Inventory. 1990 Report*, 48.
26. EPA, *The National Estuary Program After Four Years*, i, 25.
27. *A Legislative History of the Water Quality Act of 1987*, Congressional Research Service, Comm. Print No. 1, 100th Cong., 2d Sess. 391, 646 (1987 Legislative History).
28. 55 Fed. Reg. 47991.
29. 55 Fed. Reg. 47991. (Although NURP did not attempt to study oil and grease in urban runoff, EPA cites other studies that documented significant quantities of oil and grease in urban stormwater.)
30. 55 Fed. Reg. 47992 (emphasis added).
31. 55 Fed. Reg. 47991.
32. 55 Fed. Reg. 47992.
33. EPA, *Results of the Nationwide Urban Runoff Program*, 5-8 and 5-9.
34. Natural Resources Defense Council, "Poison Runoff Indexes for Washington, D.C.; Baltimore, MD; Tidewater, VA; Harrisburg, PA; Los Angeles, CA; and Cleveland, OH."
35. See, for example, NRDC's summary of results for the four Chesapeake Bay cities: Cohn-Lee, R. and Cameron, D. (1992) "Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation." *The Environmental Professional*, Vol. 14, 10-27.
36. EPA, *1990 National Water Quality Inventory*, 12-13.
37. U.S. Environmental Protection Agency (EPA), 1992. *Environmental Impacts of Stormwater Discharges: A National Profile* (EPA 841-R-92-001), 7.
38. 38 Fed. Reg. 1350 (May 22, 1973).
39. *NRDC v. Train*, 396 F. Supp. 1393 (D.D.C. 1975; Aff'd, *NRDC v. Costle*, 568 F.2d 1369, D.C. Cir. 1977). The Court held that Congress intended all point source discharges to be subject to the NPDES permit program. *Id.* 1396. The Court reasoned that, "(t)o allow the exemptions made by the Administrator is to diminish the effect of the Act . . . If a point source is exempted from the permit requirement, the Administrator then has no effective control over the polluter." *Id.* 1399. The court acknowledged that EPA had been assigned expansive tasks but nevertheless ruled: ". . . [t]he compelling congressional intent is clearly present. It is expressed in the statute itself and in the legislative history, both of which demonstrate that the discharge of pollutants without a permit is unlawful." *Id.* 1400.
40. The details of this rulemaking history are set out in NRDC's Opening Brief in *NRDC v. EPA*, Nos. 90-70611 and 91-70200 (9th Cir., U.S. Court of Appeals).
41. 1987 Legislative History, 1304, 617.
42. In section 405 of the 1987 WQA (adding section 402(p) to the CWA), Congress established explicit and firm deadlines for EPA regulation of storm water discharges. Section 402(p)(1) of the Act provides that EPA cannot require a permit for certain storm water discharges until October 1, 1992, with five exemptions (discharges that are required to obtain a NPDES permit prior to October 1, 1992): (A) A discharge with respect to which a permit has been issued prior to February 4, 1987; (B) A discharge associated with industrial activity; (C) A discharge from a municipal

separate storm system serving a population of 250,000 or more; (D) A discharge from a municipal separate storm sewer system serving a population of 100,000 or more, but less than 250,000; or (E) A discharge for which the Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States. The statute makes clear that all storm water discharges associated with industrial activities remain subject to all requirements of sections 301 and 402 of the Act, but subjected discharges from municipal storm sewers to new requirements. CWA, § 402(p)(3)(B).

43. 1987 Legislative History at 618, see also pp. 368, 391, 392,

44. 1987 Legislative History at 368.

45. *Id.* at 632. Furthermore, Senator Stafford stated, "(t)hese (municipal and industrial permit application deadline) dates are outside dates." *Id.* at 618.

46. In late 1992 Congress once again granted EPA and these stormwater sources a reprieve, giving EPA until October 1, 1993 to issue regulations, and the sources until October 1, 1994 to submit permit applications.

47. 40 C.F.R. Part 122, and Appendixes F-I. EPA defined large and medium municipal separate storm sewer systems to include only two types of municipal entity: (1) "incorporated place(s)" with populations greater than 250,000 and 100,000, respectively, as determined by the "latest Decennial (1980) Census" (listed in Appendixes F and G to the rule); and (2) counties listed in Appendixes H and I to the rule, *excluding* "municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties," (regardless of whether those incorporated places are covered under (1)).

48. Excluded areas include: Fairfield County, CT (population *excluding* incorporated places 579,000); Fulton County, GA (201,000 *excluding* Atlanta); Cook, Lake and Will Counties, IL (Chicago suburbs—over 2 million people *excluded*); Suffolk, Middlesex, Essex and Norfolk Counties, MA (Boston suburbs—2.6 million *excluded*); Macomb, Oakland and Wayne Counties, MI (Detroit suburbs—2.5 million *excluded*); Bergen, Essex, Union and Hudson Counties, NJ, and Westchester and Nassau Counties, NY (closest New York suburbs—over 4 million *excluded*); Cuyahoga, Lorain and Lake Counties, OH (Cleveland suburbs—1.4 million *excluded*); Montgomery and Delaware Counties, PA and Camden, Gloucester and Burlington Counties, NJ (Philadelphia suburbs—2.3 million *excluded*). Of 1.4 million people in Santa Clara County, California, only 825,000 live in the two incorporated places that have more than 100,000 people (San Jose and Sunnyvale). *None* of the people in adjacent San Mateo County (population 613,500) live in incorporated places. The result: under EPA's formulation, over 1.2 million people in the densely populated San Francisco suburbs of San Mateo and Santa Clara counties are not covered by the rule. Thus, the megalopolis of urbanized areas from South San Francisco to Pacifica, San Bruno, Burlingame, San Mateo, San Carlos, Redwood City, Menlo Park, Palo Alto and Mountain View are outside the purview of the rule.

49. 55 Fed. Reg. at 48039, col. 1.

50. As explained by Rep. Rowland, who was responsible for the municipal stormwater amendment in the House, this reduced the number of necessary permits from the "millions" to the "thousands." 1987 Log. Hist. at 351-52, 672. Including all municipalities as defined by the 1987 law would raise the total covered by the rule from 219 to only 641.

51. See 55 Fed. Reg. at 48041, n. 5.

52. NURP Final Report, see, e.g., Tables 6-1 E.R. at 6. NRDC brought this and other information to EPA's attention in NRDC's comments on the proposed rule. NRDC comments (March 7, 1989), pp. 13-14 & n.25.

53. Just some examples of whole counties that would meet the 640 persons/square mile test indicated as appropriate under the EPA NURP study but that are not "urbanized areas" according to the Census Bureau include San Mateo County, CA (population 613,500); Santa Clara County, CA (over 1.4 million); Fairfield County, CT (821,000); Hartford County, CT (825,200); New Haven County, CT (779,000); Duval County, FL (646,000); Seminole County, FL (240,100); Fulton County, GA (622,700); Cook, Dupage and Lake Counties, IL (over 6 million); Lake County, IN (492,000); Jefferson County, KY (681,000); Middlesex County, MA (1.3 million); Oakland County, MI (over 1 million); Hennepin County, MN (988,000); St. Louis County, MO (993,000); Bergen County, NJ (837,000); Nassau County, NY (1.3 million); Cuyahoga County, OH (1.4 million); and Montgomery County, PA (672,000).

54. 40 C.F.R. §§ 122.26(b)(4)(ii) and (7)(ii).

55. EPA, *Environmental Impacts of Stormwater Discharges*, 11 (emphasis added).

56. 1987 Legislative History at 368 and 632 (Sen. Chafee), 391, 646 (Sen. Durenberger), 559 (Rep. Roe), 847 (Conf. Rept.).

57. 1987 Legislative History at 617-18.

58. 1987 Legislative History at 846 (emphasis added).

59. The requirements for municipal storm water management plans are set forth at 40 CFR § 122.26(d)(2)(iv). The provision begins by parroting the statutory language of section 402(p)(3)(B), and then lists a series of purportedly more detailed requirements. However, none of these requirements establishes minimum criteria or performance standards. While applicants are instructed to describe structural and source control methods to reduce pollutants from storm water, and to estimate the annual pollutant load reductions from their proposed management program, *nowhere are they required to achieve any specified level of reduction of any pollutants via their storm water permits and programs.* 40 CFR § 122.26(d)(2)(iv)(A). Municipalities are required to describe a series of control measures that can be included in each such program, 40 CFR § 122.26(d)(2)(iv)(a) (1)-(6), but *virtually none of these are mandatory, and no minimum requirements or performance standards attach to these "descriptions"*. The remaining requirements for management programs are equally vague. 40 CFR § 122.26(d)(2)(iv)(C) requires a description of a program to control runoff from solid and hazardous waste disposal facilities and industrial sites, but imposes no mandatory or minimum control measures or performance stand-

ards. 40 CFR § 122.26(d)(2)(iv)(D) requires a *description* of a program to control runoff from construction sites, but again includes absolutely no minimum control requirements or performance standards. As stated in the final rule preamble, the Part 2 permit application does nothing more than provide "municipalities with the *opportunity* of proposing a comprehensive program" of storm water controls." 55 Fed. Reg. at 48045, col. 2-3. See also *id.* at 48052, col. 1-2.

60. In comments on the proposed rule, some municipalities expressed frustration with this lack of guidance. See 55 Fed. Reg. at 48054, col. 1.

61. The Conference Report states that "controls may be different in different permits. All the types of controls listed in subsection (o)(2)(C) are not required to be incorporated into each permit." 1987 Leg. Hist. at 847. As shown below, however, the fact that each permit need not be identical and select every item from EPA's menu of standards does not mean that EPA's menu can be empty.

62. 55 Fed. Reg. at 48038, col. 2 (emphasis added).

63. The State of New York, Dept. of Env. Cons. wrote of the proposed rule that "[t]he draft regulations are totally devoid of any implementable national objective for municipal stormwater permits." The N.Y.D.E.C. further stated that "EPA is obligated to give the State a much better definition of MEP" (maximum extent practicable—i.e., the level of control required) and recommended "a body of nationally approved BMP guidelines" for the permits.

64. 55 Fed. Reg. at 48038, col. 3 (emphasis added).

65. U.S. EPA, 1983. Results of the Nationwide Urban Runoff Program, Final Report. Washington Metropolitan Council of Governments, 1987. Controlling Urban Runoff: A Practical Manual for Designing Urban BMPs.

66. Nine precipitation regions are outlined in the EPA stormwater rule for purposes of setting monitoring requirements. 55 Fed. Reg. at 48073.

67. Schueler and Bley. "Chesapeake Bay Critical Area—A Framework for Evaluating Compliance With the 10% Rule." Metropolitan Washington Council of Governments for Maryland DNR. May 1988. The Florida stormwater rule can also be considered a pollutant reduction performance standard. Although it is written as a flow retention standard, it is based on a pollutant reduction objective of 80 to 95% removal of phosphorus and other typical runoff pollutants.

68. Livingston, Eric. "Urban Storm Water Quality Management: the Florida Experience." Implementation of the Florida Stormwater rule by individual water management districts has also included use of the design storm concept. Other States with hydrologic-type storm water performance standards include: Pennsylvania (preservation of natural flow regimes); Maryland (maintenance of pre-development peak discharge rates for a 2-year storm event); and North Carolina (Minimum design volumes and maintenance of pre-development peak discharge rates).

69. This has been shown to be quite feasible as a design principle for landscape architects, and less costly by a factor of four than conventional pave-as-usual, treat-later, end-of-pipe approaches. Sykes, R., 1989, "Site Planning," Chapter 3.1 in *Protecting Water Quality in Urban Areas. Best Management Practices for Minnesota*. Minnesota Water Pollution Control Agency. The author, Robert D. Sykes, ASLA, is Associate Professor of Landscape Architecture, University of Minnesota. "The modern classic example of a comprehensive approach to development incorporating all of these (water-sensitive site design) goals is Woodlands New Community located north of Houston, Texas, planned and designed by Wallace, McHarg, Roberts and Todd, Landscape Architects and Planners, Philadelphia, Pennsylvania. . . . In the original planning, engineers compared the cost of the natural drainage system to that for a conventional approach and found that the natural drainage option saved over \$14 million" *Id.* 61, 3.1-7.

70. Natural Resources Defense Council, 1993. Draft bill, Urban Watershed Restoration Act of 1993; 15 pp.

71. *Op cit.* at n.35.

72. U.S. EPA (1992) Environmental Impacts of Stormwater Discharges. EPA 841-R-92-001, at 19.

73. *Id.* at 16.

74. *Id.* at 11.

75. U.S. EPA, 1983. Results of the Nationwide Urban Runoff Program. Volume 1—Final Report, at 9-5. NTIS #PB84-185552.

76. Weiss, Kevin (1993). From an unpublished paper delivered at the Chicago EPA Region V Stormwater Conference, April 1993 at 8. "Stormwater and the Clean Water Act: Municipal Separate Storm Sewers in the Moratorium."

77. U.S. Environmental Protection Agency (EPA), 1989. *1988 Needs Survey Report to Congress: Assessment of Needed Publicly Owned Wastewater Treatment Facilities in the United States*, Office of Municipal Pollution Control, 1, 15.

78. EPA, *1988 Needs Survey Report*, 15.

79. EPA, *1988 Needs Survey Report*, 12. EPA's documentation requirements are detailed in the Needs Survey at Appendix D. These requirements (which effectively keep out of the official "count" those needs which do not meet the requirements) have the effect of underestimating the CSO problems which the States themselves deem to be in need of correction. The States of Illinois, Maine, New Jersey, New York, Oregon, Pennsylvania and Washington estimated that they had an additional "separate" (i.e., not "documented" in accordance with EPA requirements) need for CSO correction funds of nearly \$2.14 billion in 1988. *Id.* Appendix A-7.

80. EPA, *1988 Needs Survey Report*, 15. The same pattern holds true for the "separate" needs. Of the States citing additional separate CSO needs outside the documented needs in the Needs Survey, 6 of 7 are marine coastal States and one is a Great Lakes State. *Id.* Appendix A-7.

81. EPA, *1988 Needs Survey Report*, 12.

82. 1990 U.S. population is estimated to be 249 million. National Oceanic and Atmospheric Administration (NOAA), 1990. "Fifty Years of Population Change along the Nation's Coasts, 1960-2010," 4.

83. U.S. Environmental Protection Agency (EPA) (undated). "Seminar Publication: Benefit Analysis for Combined Sewer Overflow Control," Office of Technology Transfer, 2, citing Lager A. *et al.*, "Urban Stormwater Management and Technology, Users Guide" (1977).

84. EPA, "Benefit Analysis," 2.

85. 40 C.F.R. § 133.102.

86. EPA, "Benefit Analysis," 2.

87. See, for example, the State Water Quality Standards for Florida, Maryland, New York, and North Carolina. NRDC, *Testing the Waters*, 12.

88. U.S. Environmental Protection Agency (EPA), 1986. *Report to Congress on the Discharge of Hazardous Wastes to Publicly Owned Treatment Works*, E-3.

89. U.S. Environmental Protection Agency, Status of Combined Sewer Overflows Strategy Approvals (current as of 7/20/92).

90. U. S. Environmental Protection Agency (EPA), Draft Combined Sewer Overflow Control Policy (December 18, 1992).

91. These include no more than 4 overflows per year in urban areas and no more than 5 in rural areas; or capture or elimination of 85% of overflows by volume or the equivalent in pollutant mass. EPA Draft Combined Sewer Overflow Control Policy, 18-19. Cities may adopt alternative controls if they can demonstrate compliance with water quality standards and protection of designated uses.

TESTIMONY OF MARTHA PROTHRO, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee; I am Martha Prothro, Acting Assistant Administrator of the Office of Water at the United States Environmental Protection Agency (EPA). Accompanying me this morning is Michael B. Cook, who is Director of the Office of Wastewater Enforcement and Compliance within EPA's Office of Water. I am grateful for the opportunity to testify this morning. Along with last Wednesday's hearing and those scheduled in the weeks to come, today's hearing provides a valuable opportunity to examine a variety of issues surrounding reauthorization of the Clean Water Act (CWA), and an occasion for the Administration and the Congress to share our views.

While the Administration has not had time to take positions on most of the funding provisions in the S. 1114, I would like to point out several major differences between the bill and the President's budget. First, the authorization level for the Clean Water SRF in the bill starts at \$2.5 billion in FY 1995 and can increase by \$500 million each year until the year FY 2000, when it can reach \$5 billion. This compares to \$2 billion per year in the President's proposal for FY 1995 to 1998, a difference of \$5 billion over the four years. Second, S. 1114 authorizes \$300 million for nonpoint source grants in FY 1995 increasing to \$600 million in FY 2000, compared to \$100 million per year in the President's proposal. We acknowledge the Committee's efforts to tie spending to government-wide deficit reduction goals. However, we are concerned that the levels proposed in S. 1114 may be unrealistic to meet the discretionary spending caps in the revised Budget Enforcement Act endorsed by the Congress and the Administration.

I will address my remarks to four areas of concern: the future federal role in funding our nation's wastewater infrastructure; funding of our regulatory programs through permit fees; controlling discharges from combined sewer overflows (CSOs); and, controlling storm water discharges.

STATE REVOLVING FUNDS

For nearly four decades now, the federal government has provided substantial funds to local communities for constructing wastewater treatment works and other water quality projects. Since 1972, with the passage of a comprehensive package of amendments we now know as the Clean Water Act, EPA has distributed more than \$60 billion to improve the quality of the nation's waterways. Most of these federal funds have been awarded under Title II of the Act as direct grants to local communities for the construction of wastewater treatment works. Today, federal dollars are capitalizing State Revolving Funds (SRFs), which are operating in all 50 States and Puerto Rico.

It is very important for the States to be able to fund necessary water pollution control efforts. Through federal capitalization of State revolving loan funds, we help the States provide assistance to local communities striving to achieve water quality standards and comply with the mandates of the federal law. Because great strides have been made in improving water quality from traditional point sources such as municipal wastewater treatment plants and industrial dischargers, our priorities are now shifting to include the newer mandates to control combined sewer overflows, storm water discharges and nonpoint sources of pollution.

Because of differences in the pollution problems affecting the different watersheds, the costs of complying with water quality standards and guidelines are unevenly distributed among States and communities. In some cases, such as some cities with combined sewer overflow control needs, the costs are extraordinarily high on a per capita basis. In addition, some needy communities face risks to their local environment and public health because they simply cannot afford the costs of treating wastewater on their own. This raises a troubling issue of environmental equity for the people in needy communities who cannot afford to pay the full costs to clean up the local environment or may even have an incentive to accept the pollution that wealthier areas reject in order to increase local income or employment.

Economic conditions in many States in recent years have prevented them from capitalizing their SRFs beyond the minimum required in the Act. Additional capitalization from the federal government will help ensure that the funds will be able to continue meeting wastewater treatment needs in the future. Without additional capitalization, existing State SRF programs will not generate funds to provide even current levels of State and federal assistance to localities. Thus, although municipalities bear most of their own wastewater treatment costs, there continues to be an important role for the federal government in financing water pollution control efforts.

BACKGROUND

The SRF program was established in the 1987 amendments to the Act. In that year, Congress decided to phase out the Title II construction grant program, and replace it with a new mechanism for funding wastewater treatment and other water quality projects. The SRF program has brought a fundamental change in the relationship among all levels of government in clean water funding. No longer is the federal government awarding grants directly to local communities, with the State acting as intermediary. Instead, EPA now awards grants to States to capitalize State Revolving Funds (SRFs). From these funds, States can make low interest loans and provide other types of assistance (but not grants) for the construction of publicly-owned wastewater treatment works, and for a wide range of nonpoint source and estuary protection projects and activities.

Congress was very far-sighted in requiring a shift to SRFs. As SRF loans are repaid into the funds, they become available to other communities that also wish to borrow. In this way, the SRFs are largely self-sustaining, providing funds for water quality far into the future. This self-sustaining feature is critical to the success of the funds.

The transition from the Title II construction grant program to the Title VI SRF program has gone well. Over \$7 billion of federal capitalization grant funds have been awarded to the States. These funds, along with State matching funds and bond proceeds, have made more than \$11 billion available to localities for needed water quality projects. More than 1300 municipalities have received low interest loans through the SRF. Approximately 70% of the loan assistance provided to date has been for the construction of secondary and advanced wastewater treatment plants. Another 25% has been used for sewer construction. The remaining 5% has been made available for combined sewer overflow abatement, storm water control, nonpoint source management and other projects.

The SRF program is widely considered a success, and a prototype for the federal, State and local partnership in infrastructure financing. SRF loan repayments continually replenish the funds, making more dollars available for water quality improvement projects. States can use their SRF accounts to issue bonds and thereby leverage the amount of funds available for project assistance: According to reports from the States, SRF funded projects proceed faster and at a lower cost than projects funded by direct construction grants.

The success of the SRF program lies in the degree of latitude it allows States to fund projects and activities that reflect real environmental priorities. Like its predecessor, the construction grant program of Title II, it has been notable for an absence of the scandals that sometimes afflict other federal funding programs. Indeed, the SRF program has essentially fulfilled the hopes of its creators. It has become the prototype for a federal, State and local partnership in infrastructure financing.

Underlying the enactment of the SRF program in 1987, was Congress's vision of the federal role in funding water quality facilities. With an adequate funding commitment from the federal government, responsible stewardship, and additional funding by State officials, wise use of innovative financing techniques, and a well-understood level of wastewater treatment needs, the SRFs could be counted on as the

chief source of funding for water quality projects and activities in the years to come. It was assumed that, by 1994, federal funding would no longer be necessary.

By the end of this fiscal year, appropriations for the SRF program will nearly match the amount authorized by Title VI in 1987. State officials have managed the funds effectively, and many States have found innovative means to stretch SRF dollars further. Unfortunately, SRFs are not yet able to meet water quality needs. If States had to rely upon repayments and current levels of State funding alone, SRFs would only generate about half the level of assistance which was provided to municipalities over the last 10-15 years under the construction grant and, more recently, SRF programs. Moreover, the number and cost of needed water quality projects has escalated well beyond what we predicted in 1987. In particular, we now have a better understanding of the costs of addressing wet weather problems (i.e., combined sewer overflow abatement and storm water management). We also have new, more-stringent water quality standards to meet in many areas.

In the intervening years, we have improved our understanding of the wide variety of human activity that impairs the quality of our waters. Along with our improved understanding, comes an increased appreciation of the costs that we must bear to restore water quality.

The Agency will soon release the results of the 1992 Needs Survey. The total estimated needs, which include both documented and modeled needs, have increased to well over \$100 billion. The combination of increasing needs and undercapitalization argues strongly for continued federal financial support for the SRF program.

Authorizations for the current SRF program are scheduled to expire in fiscal year 1994. Nearly \$9 billion has been appropriated to date for the SRF program. The President's budget includes \$1.2 billion for fiscal year 1994, and \$2 billion for each of fiscal years 1995 through 1998—an additional \$9.2 billion which, when funded, would double the amount currently available.

We have learned a lot since the first Title VI grant was awarded in March of 1988, and we have some suggestions on how to improve the program. I will summarize some of our recommendations in six broad areas.

Expanding Eligibility for SRF Funding

The first issue I would like to discuss is the expansion of the projects and activities eligible for assistance under the SRF program.

Under section 201(g)(1) of the current law, only 20 percent of the amount of capitalization grant funds can be used for combined sewer overflows, storm water pollution control and other sewer projects. With the growing evidence of water quality problems associated with wet weather flows, EPA is proposing to remove statutory limitation on funding of combined sewer overflow and storm water management projects.

We are also considering SRF eligibility for development and implementation of water use efficiency activities, including installation of water saving plumbing fixtures and for development and implementation of pollution prevention plans and activities. These activities can reduce the need for costly expansion of treatment capacity.

Possible Funding Limitations

Activities eligible for funding under the current statute are, in many ways, unrestricted by the current statute. Funding of nonpoint source management activities is particularly open-ended. One interpretation of the current statute is that any activity that a State includes in its section 319 plan is eligible for SRF assistance. We are concerned that some States are proposing projects that may contribute to water quality improvement, but primarily address other environmental objectives or public purposes. For example, some wish to use SRF funds for municipal landfills or to correct leaking underground storage tanks.

A number of issues have also arisen with respect to the eligibility of various private parties to receive SRF assistance. These issues have emerged most prominently in recent years, with the completion of nonpoint source management plans and the movement away from a sole focus on traditional publicly-owned treatment works. Consequently, within the Agency we have questioned whether we should limit SRF-eligible activities in some way based on the purposes, benefits, or ownership of the measures that are proposed for funding. We are currently reviewing these issues and will formulate our position in the near future.

Project Targeting and Priority Setting

Ensuring that States can target funding for State priorities is fundamental to the SRF program. States are required to fund municipal wastewater treatment facilities

based upon priority systems and priority lists. No such requirement exists for State funding of nonpoint source or estuary projects.

We are considering whether changes should be made to the SRF program to provide for States to adopt comprehensive priority systems for all activities eligible for SRF funding. This could help to ensure that scarce SRF funds go to projects with highest returns in terms of water quality improvement and risk reduction.

Meeting the Needs of "Needy" Communities

We are often urged to make fundamental changes to the SRF program to better meet the needs of "needy" communities.

Under the current SRF program, States may provide loans to communities with interest rates ranging from zero percent to market levels. It has become apparent that some communities cannot afford to repay SRF loans even at zero percent interest. These communities are not well served by other sources of loan financing because of their limited credit-worthiness. Projects in these Communities are often expensive on a per capita basis. Many States and groups representing small and economically disadvantaged ("needy") communities have recommended that certain changes be made to the SRF program which would enable States to provide more-affordable financial assistance.

In the short term, we are requesting funding only for cities that meet certain hardship criteria. For FY 1994, we have proposed that grant funding would be available to any city that has more than \$2 billion in documented needs and user charge rates that exceed 0.65 percent of median household income. Currently, only the city of Boston meets both criterion for "needy cities" grants, and the Agency supports an authorization of \$100 million for the program in FY 1994. We will continue to consider whether other provisions would be appropriate for the long term. We look forward to working with the Subcommittee in this regard.

The loan and grant programs of the Rural Development Administration (RDA) will play a key role in providing assistance to small communities that cannot afford SRF loans for the total cost of their projects. The RDA will receive significant increases in funding under the Administration's budget proposal and will increase emphasis on helping communities to meet environmental requirements in its loan and grant programs. Over the period from FY 1994 to 1997, the President's budget proposal for RDA would provide more than \$2.4 billion in grants and more than \$3.9 billion in loans to rural communities to assist with wastewater treatment needs. EPA is working with RDA to encourage selection of projects based on environmental benefits as well as financial need.

In addition, we recommend some adjustments to the SRF program to better serve communities for which traditional SRF assistance may not be the answer. We seek authorization to use up to one percent of the Title VI appropriation for making grants to Indian Tribes and Alaska Native Villages for the construction of wastewater facilities pursuant to Title II. Our proposal includes authority to provide the allotment under Title VI to the District of Columbia, Virgin Islands, Pacific Trust Territory, Guam, and other single level-of-government jurisdictions in the form of grants for implementation of activities eligible under Title VI.

Capitalization Options for the SRF Program

Perhaps the most basic questions we must face in our discussions on reauthorization of the SRF program are: how much can the federal government afford to contribute to the program, and, what changes are needed to ensure the long-term financial health of the program, including additional capitalization beyond the currently proposed federal authorization period?

The answer to these questions is dictated by national budget constraints and issues relating to the federal role in such funding. For fiscal year 1994, we propose authorizing \$1.2 billion for Title VI. For fiscal years 1995 through 1998, the authorization should increase to \$2 billion a year. Based, on the current SRF program, the Agency estimates that over a twenty year period States will provide SRF loans at a total value of approximately two and a half times the initial federal capitalization.

Since 1987, EPA has been allotting funds to States in accordance with a Congressionally-established formula that reflected the needs and population patterns that existed at that time. In the past few years, our understanding of needs has improved and, of course, populations have shifted. It is now appropriate to reexamine our needs estimates and growth rates and develop a more suitable allotment formula for the years to come.

In the past, Congress has been responsible for devising the allotment formula. When Congress has chosen to consult with us as part of their deliberative process, we have encouraged Congress to consider relative needs as one of the primary fac-

tors that should be given weight in deciding the equitable distribution of such a large amount of federal funding. We have always supported Congress making the decisions in this area, because the very nature of allocating funds among States is fundamentally more appropriate for Congress than for the Agency. We stand ready to provide technical assistance, as we have in the past, but ultimately this process is best accomplished through the legislative branch.

Leveraging

We note that S. 1114 would require States to make binding commitments equaling 200 percent of their capitalization grants, rather than 120 percent as under current law. This would compel many States to leverage fund accounts. Although the Administration has not had time to analyze this measure thoroughly and to take a final position, we foresee the following problems. First, in order for leveraging to succeed, a State must have a large number of projects ready to receive loans immediately, in order to ensure that interest earnings are available immediately to the State to meet its bond market repayment obligations. Many States are not in a position to do this. As a consequence, under a mandatory leveraging program, funds from these States would have to be reallocated. Second, in order to make leveraging work, States need to charge interest rates that are higher than the interest they are paying on their bonds. Several states have predominantly small and needy communities and tend to give very low- or no-interest loans to a majority of their SRF borrowers. If these States raised their interest rates significantly in order to pay off leverage bonds, many local participants might be unable to obtain needed loans. Finally, leveraging provides only short-term benefits (in terms of increasing the number of projects that can be funded); over the long term, interest earned by the State is used to pay off bonds instead of providing for future assistance. Thus, the size of the program may actually decrease in some cases.

OTHER FUNDING ISSUES

While the SRF program provides the major share of federal funding for water quality projects in the U.S., there are other funding issues that we must examine in the context of Clean Water Act reauthorization.

The population along our 2,000 mile boundary with Mexico has grown enormously in recent years, in towns and cities south of the border and in the "colonies" of U.S. border States. This population growth has been accompanied by a number of serious water quality problems. Several contaminated Mexican waterways flow into the U.S., threatening the Imperial Valley of California, the area of Nogales, Arizona and other important U.S. water resources. In many areas, the U.S. and Mexico share surface and ground-water resources that have become polluted. In many of the colonies, where hundreds of thousands of people have settled, basic sanitation facilities are lacking.

Almost \$130 million have been appropriated through fiscal year 1993 for wastewater treatment facilities in the vicinity of San Diego and Tijuana Mexico, to correct water pollution problems along the ocean beaches and estuaries near San Diego. In fiscal year 1993, \$70 million have been appropriated for assistance to the colonies. For fiscal year 1994, the Agency is requesting an additional \$150 million for a range of projects and activities. This figure includes \$70 million for the Tijuana project, and \$20 million for other wastewater treatment projects along the border. The remaining \$60 million will be for the colonies.

In general, we oppose earmarking SRF funds for particular purposes. The SRF program should remain the primary vehicle for meeting the funding needs of States and municipalities, other than small communities funded through RDA. However, we are concerned about the cost burdens faced by several communities. For truly hard-pressed communities, those for whom SRF funding may not be a feasible alternative, the Agency is now exploring other options.

PERMIT FEES

The next subject I will discuss is permit fees. The 1987 amendments to the CWA contained a number of major new mandates, including new program responsibilities relating to storm water permitting, sludge management, and water quality standards. We recognize that States are finding the costs to fulfill the mandates to be very burdensome and have often had to divert substantial resources from their base scientific and regulatory activities into areas of new mandates. While the State funding problem is primarily a problem the States must themselves address, the federal government can help and, since the States are critical to the success of the CWA, the federal government should help. In order to help the States, we are study-

ing options to ensure that States have adequate funding to execute their responsibilities. One option would be mandating State permit fees as a condition of program approval, possibly modeled after those in the Clean Air Act, that would be designed to recover the cost of State permit, enforcement and monitoring programs.

Currently, the main federal authority for the water program to develop a permit fee structure is found in the Independent Offices Appropriations Act or IOAA, which authorizes a fee for service to a discrete entity. Our ability to use the IOAA to recover the costs of broadly applicable efforts, such as the development of regulations and standards, or activities which appear to provide no direct tangible benefit to the permittee, such as compliance monitoring, is not clear. Without specific authority to develop program cost recovery fees, it is unlikely that States or EPA will have sufficient ability to recover the costs of developing and administering these programs.

We need authorization to recover the costs of developing and implementing generally applicable regulations, standards and guidance, as well as those specific to an industry category. We seek specific authorization to recover the costs of monitoring compliance and ambient water quality, conducting laboratory quality assurance activities, creating and maintaining data inventories, responding to inquiries (including the development of status reports on program implementation), and implementing the fee system itself. This fee system would not be for punitive purposes or to fund the general treasury, but specifically to fund the implementation of the NPDES, pretreatment and sludge programs.

Thirty-nine States have developed wastewater fee systems; however, few are sufficient to fully fund the program and several are not sufficient to bring total funding to adequate levels. We believe that authorizing a federal fee program in unauthorized States and States with inadequate fee programs of their own will serve as a powerful example and incentive for States to develop appropriate systems.

Current State fee systems must be considered, however. Some are sufficient to recover a majority of program costs even now and need not be abandoned. Others, while insufficient in monies collected, use fee schedules or formulas which have gained the acceptance of the regulated community through the years. Some fee systems are based strictly on flow. Others consider categories of discharge. Some are annual fees based on loadings of toxic pollutants and may promote pollution prevention, while others recover flat fees for the processing of an application. No one method is the best; each has its merits. The States should be given latitude in determining the basin for fees. The most important factor is the sufficiency of the resulting revenues. This could be encouraged through imposition of a federal fee system based on a rough measure of sufficiency for program costs and then providing deference to acceptable State fee systems.

COMBINED SEWER OVERFLOWS

Discharges from combined sewer overflows (CSOs) remain a significant threat to public health and the environment in over 1100 communities serving 43 million people. The costs to correct this public health and water quality problem are significant. However, existing statutory authority is sufficient to allow EPA and States to tackle this problem through the NPDES program. In 1993, EPA published a Draft CSO Policy that constituted a breakthrough in correcting the CSO problem, notably because it reflected fundamental agreement among States, cities and citizens groups and also recognizes the site specific nature of CSO impacts and the ability of communities to pay for the necessary controls.

Today, most cities in the United States have separate sewer systems for storm water runoff and for sanitary wastes. However, in the older sections of the country, primarily in the Northeast and Great Lakes regions, combined sewer systems still exist. During dry weather, combined sewer systems carry sanitary wastes and commercial and industrial wastes to publicly owned treatment works. In periods of rainfall, however, the storm water runoff can greatly exceed the capacity of the combined sewer system and overflow the structures that normally divert the wastewater stream to the publicly owned treatment works. The storm water—along with the sanitary and industrial wastewaters that are in the system—then flows directly into surface water bodies such as lakes, rivers, estuaries, or coastal waters. These resulting overflows from the combined sewer systems are called CSOs.

CSO discharges contain pollutants from raw domestic sewage, industrial and commercial wastes, and storm water runoff. Raw sewage from households can introduce pathogenic bacteria into swimming waters and drinking water supplies. Other pollutants cause biochemical oxygen demand that depletes the oxygen in the water and alter aquatic ecosystems. From commercial and industrial waste components, the

overflows can contain additional nutrients, metals, bacteria, toxic organics, dissolved and settleable solids, and floatable materials. The storm water component contains sediment, organic waste, toxic materials and floatable debris washed from streets, lawns and gardens, parking lots, construction sites, and industrial areas.

Numerous studies have concluded that CSOs are major contributors to water pollution in some water bodies. For example, the Natural Resources Defense Council is conducting a continuing investigation of beach closings. Their first report, in 1991, stated that "[h]igh levels of bacteria in coastal waters are responsible for the overwhelming majority of the beach closures and pollution advisories in the 10 States studied." More than 2400 beach closures and pollution advisories issued in 1989 and 1990 were due to the presence of high levels of bacterial contamination.

Like all point sources of pollution, CSOs are covered under the Clean Water Act. Under the NPDES program, municipalities must have permits for their CSO discharges. These permits are intended to ensure that the discharges will not cause the receiving waters to violate applicable water quality standards (including any uses, such as fishing and swimming, that have been designated for those waters), and that the discharges meet the technology-based requirements of the Act.

Historically, control of CSOs has proven to be extremely complex for a number of reasons. First, CSOs can exhibit extreme variability in the volume, frequency and characteristics of the discharge. Second, compared to other waste water treatment technologies, relatively few studies have been completed that document the efficiency or cost effectiveness of CSO controls. Third, while we know that CSOs can have significant impacts on water quality, there has been difficulty distinguishing contributions to water quality impacts by CSOs from impacts from other sources (e.g., non-point sources) during wet weather events. Last, and probably most important, are the financial considerations for communities with CSOs.

In an effort to resolve these challenges, EPA's Office of Water issued a National Combined Sewer Overflow Strategy on August 10, 1989. The strategy reaffirmed that CSOs are point sources subject to NPDES permit requirements and the Clean Water Act. The 1989 Strategy recommended that all CSOs be identified and categorized according to their status of compliance with these requirements. The strategy set forth three objectives: a) to ensure that if CSO discharges occur, they are only as a result of wet weather; b) to bring all wet weather CSO discharge points into compliance with the technology-based requirements of the CWA and applicable State water quality standards; and c) to minimize water quality, aquatic biota, and human health impacts from wet weather overflows. In addition, the strategy called upon the States to produce State-wide permitting strategies designed to reduce pollutant discharges from CSOs.

While the 1989 Strategy was successful in focusing increased attention on CSOs, the Strategy fell short in resolving many fundamental issues. In January of this year, EPA published in the *Federal Register* (58 FR 4994) a Notice of Availability for a draft CSO Control Policy. The permitting portions of the Policy were developed as a result of extensive input received during a negotiated policy dialogue with key stakeholders including municipal groups, States, environmental groups, and other interests. The negotiated dialogue was conducted through the Office of Water's Management Advisory Group. The public comments on the Draft Policy have been highly supportive and indicate that the Draft Policy was successful in dealing with issues that had prevented significant progress in the past. The policy contains provisions for developing appropriate, site specific NPDES permit requirements for all combined sewer systems that overflow as a result of wet weather events. The Draft Policy also provides for enforcement initiatives to require the immediate elimination of overflows that occur during dry weather and to ensure that the remaining CWA requirements are complied with as soon as possible.

First, the Policy would have CSO permittees immediately undertake a process to accurately characterize their combined sewer systems, demonstrate implementation of the nine minimum controls, and develop a long-term CSO control plan. Once the long-term CSO control plan is completed, the permittee will be responsible to implement the plan's recommendations as soon as practicable.

Second, State water quality standard authorities would be involved in the long-term CSO control planning effort to coordinate the review and possible revision of water quality standards and implementation procedures on CSO-impacted waters with the development of the long-term CSO control plan.

Third, NPDES authorities would issue or reissue permits to require immediate compliance with the technology-based and water quality-based requirements of the CWA, and after completion of the long-term CSO control plan, incorporate the appropriate requirements into NPDES permits.

Lastly, NPDES authorities would also commence enforcement actions against all CSO permittees which have CWA violations due to CSO discharges during dry weather. In addition, NPDES authorities should ensure the implementation of the nine minimum controls and incorporate a schedule, with appropriate milestone dates, to implement the required long-term CSO control plan into a civil judicial action or administrative order.

We believe that this Draft CSO Policy has been met with great acceptance because of the appropriate considerations given to: the need for sound characterization of combined sewer systems; the site specific nature of CSO impacts; the need for effective planning and public participation; special emphasis for environmentally sensitive areas; and the recognition that municipal affordability affects the timing of CSO control implementation.

Our goal is to publish a final policy in the Federal Register in October 1993. About the same time, EPA plans to issue a number of final and draft guidance documents to support the implementation of the Final Policy.

We believe that revisions to the CWA are unnecessary to properly control CSOs. The existing CWA provides sufficient legal authority to implement the draft policy and bring CSOs into compliance with CWA requirements and State water quality standards.

A few comments on CSO costs are important. Our soon to be released 1992 NEEDS survey provides us with estimates of the costs for cities to achieve the degree of controls outlined in EPA's draft CSO policy. We estimate the CSO abatement costs to these 1100 cities to be about \$43 billion. To help put this estimate into perspective, this country has invested approximately \$80 billion in the nearly 15,000 publicly owned treatment works in the United States. Another important aspect of the \$43 billion estimate is that it is not equally distributed among the 1100 communities with CSOs. We believe that a relatively small number of large cities will bear a significant portion of the total cost.

By way of reminder, we are talking about approximately 1100 cities with combined sewer systems serving a population of about 43 million. Almost 85% of the systems are located in eleven States in the northeast and Great Lakes (Maine, Massachusetts, Vermont, New Jersey, New York, Pennsylvania, West Virginia, Illinois, Indiana, Michigan and Ohio. While many large cities like Boston, New York, Chicago, and San Francisco have combined sewer systems, over 60% of the 1100 systems serve populations of fewer than 10,000.

STORM WATER

The storm water program is based largely on the 1987 Water Quality Act amendments. States report that storm water discharges from diffuse sources are responsible for approximately one third of remaining assessed surface water impairment. The 1987 Amendments established a two phased program to address the discharge of contaminated storm water to our nation's water. Phase I of the program more than doubled the size of the existing national industrial and municipal NPDES permit program. Phase II has the potential for further increasing the size and scope of the NPDES program more than *ten* times again.

Under Phase I, section 402(p) specifically requires EPA to establish a storm water program with permit application and issuance requirements both for industrial activities and for municipal separate storm sewer systems over 100,000. In November 1990, the Agency issued Phase I application regulations for 220 municipalities and counties as well as 11 categories of industrial activity. Under Phase II, EPA is required to develop storm water program strategy to address all remaining storm water discharges to protect water quality. These include contaminated storm water discharges from light industrial, commercial, retail, residential activities as well as small municipalities.

EPA and States have made impressive progress on Phase I with limited resources. However, there is a tremendous amount of work left to be done, and there are several important issues that should be considered in the context of reauthorization. Over 100,000 industrial activities and more than 250 municipalities and counties have been identified for permit issuance under the Phase I storm water program. More than half of identified industrial activities have been covered by either EPA or State general permits, but tens of thousands still do not have coverage under Phase I permits. On the municipal side, EPA and States have received municipal permit applications from most of the large and many of the medium municipalities. States and EPA Regions must now work with each of these municipalities and counties in developing and issuing systemwide storm water permits. The real Phase I challenge for all of us is to continue the national momentum and assure

that storm water permit coverage translates into effective on-the-ground storm water management practices and achieves real environmental gains.

Under the CWA, municipal storm water permits must require immediate compliance with effluent limits based on applicable State water quality standards. Given the complexity of storm water discharges and controls and the time it takes to implement municipal or county-wide storm water management practices, immediate compliance will simply not be possible for many cities. Providing one or more five year permit terms to meet water quality standards may be a reasonable alternative.

Under current CWA provisions, the storm water program requires CWA permits for industrial activities even if they are discharging to municipal separate storm sewer systems, which also must obtain storm water permits. Some have argued that this approach is redundant and inefficient, and also undercuts the effectiveness of municipalities in dealing directly with industrial facilities discharging to municipal systems. One possibility in this area would be to allow EPA to authorize municipalities to establish programs for storm water permit issuance and controls where they have the appropriate authority and are willing to commit to implement national storm water requirements.

On the industrial side, providing facilities with a mechanism to avoid regulation under the storm water program where there is no exposure of materials, equipment, or wastes to storm water is an approach that may create powerful incentives for industry to adopt storm water pollution prevention practices. EPA originally established so called "opt-out" provisions for light industry as part of its 1990 storm water application rule. These provisions, however, were overturned by the Ninth Circuit Court of Appeals as inconsistent with CWA statutory storm water provisions. This is an area in which additional flexibility for EPA and the States might allow us to accomplish the pollution prevention objectives of the storm water program in some cases without the need to issue a permit.

With regard to Phase II of the storm water program, which is not due for full implementation until October 1, 1994, EPA has undertaken several outreach efforts to solicit input on potential scope, control strategies, and appropriate deadlines. Over the past year, EPA has held 6 public meetings to discuss and receive comments on how best to approach Phase II. In September of 1992, the Agency also issued a Federal Register Notice requesting additional comment. We are evaluating available information on activities that may be covered and assessing a number of possible approaches on how to proceed with Phase II. Initial estimates indicate that Phase II has the potential to affect more than 1,000,000 (and perhaps as many as 7 million) additional commercial, retail, and light industrial discharges.

We are presently developing different options for a Phase II strategy that will provide the most effective targeting of high risk sources, and identify appropriate roles for federal, State, and local government. We are attempting to strike the right balance between pollution control under the nonpoint source program and the issuance of permits under the NPDES program. We generally think that many Phase II sources may best be addressed under an expanded and strengthened nonpoint source program, while reserving the authority to regulate any storm water discharge as a point source if control efforts under the nonpoint source program fail or are deemed inadequate.

CONCLUSION

With some modest changes to the programs I have outlined today, and continued leadership by the federal government, I believe we can achieve the goal of cleaning up the nation's waters for the generations that follow us.

Thank you Mr. Chairman. I will be happy to answer any questions that you and the other members of the Subcommittee may have.

TESTIMONY OF TERRY AGRISS, PRESIDENT, NEW YORK ENVIRONMENTAL FACILITIES CORPORATION

Mr. Chairman and members of the Committee, I am Terry Agriss, President of New York State's Environmental Facilities Corporation. I am pleased to appear before you today to testify both in that capacity and as President of the Council of Infrastructure Financing Authorities (CIFA). CIFA is a national organization of State and local authorities whose mission is to facilitate financing of public infrastructure facilities. Most of our State members manage at least the financial component of the State Revolving Loan Funds (SRFs) for wastewater treatment, and as such, are vitally interested in the future of the SRF program.

My testimony will address Title VI of the Clean Water Act and the SRF provisions. Briefly, we support a reauthorization of this program which, from our experience as State managers, is operating as an extremely efficient and economic means to provide low-cost financing of public wastewater treatment needs. Clearly, the SRFs have fulfilled the vision which Congress had when it created the loan funding mechanism in 1987, and we are pleased that the Title I provisions in S. 1114 reflect this Committee's continued bi-partisan support to maintain and expand the SRFs.

We urge the Committee and the Congress to extend the programmatic and financing authority for Title VI which, with some minor legislative adjustments, can address the nation's major needs for wastewater funding well into the next century. In support of this assertion, let me respond to some questions which the Committee may wish to pose:

I. Is the SRF Mechanism Working?

With five years experience, we are pleased to say that the SRF program is working and working well. All 50 States and Puerto Rico have met the requirements of Title VI of the 1987 Act, having passed the requisite laws, provided the necessary matching funds, and set up the administrative and financial management mechanisms to effectively put the program in place. All of these State programs are now fully operative, making low interest rate and interest-free loans to communities to meet their wastewater financing needs.

A survey undertaken by the Ohio Water Development Authority of all State SRF programs found that as of June 30, 1992, States had received nearly \$6 billion in federal capital grants for their SRFs. This federal investment, together with \$1.4 billion in State matching funds and over \$5 billion created by leveraging the individual State Funds, has formed a total lending pool of \$10.7 billion from which 1,363 project loans have been made. It is noteworthy that the federal contribution has been nearly doubled by state match and leveraging of the funds. The ability to leverage the fund and its revolving nature comprise the distinguishing features of the SRF—its capacity to take a limited federal capital contribution and parlay it into expanded long-term financing.

II. Is There a Need for Further Federal Financial Assistance?

The present equity in the SRFs is not enough to fully finance necessary municipal treatment projects. Nationally, wastewater treatment funding needs are now estimated in excess of \$100 billion. New federal requirements for combined sewer overflow correction and storm water pollution abatement as well as non-point source controls, will cause these estimates to escalate. In New York State, estimated treatment needs are \$24.3 billion. In your state, Mr. Chairman, our Florida member advises that the State has estimated needs of \$6 billion over the next 20 years. These are costs for legitimate projects necessitated by requirements of the Federal Clean Water Act under consideration here today. If Congress expects states and communities to meet these mandated requirements, it must continue to provide financial assistance. Without it, you will see a deterioration in municipal compliance which will endanger not only our nation's water quality, but erode the foundation of the cooperative compact between the localities, the states and the federal government, in accomplishing our environmental objectives. It is that simple.

III. Are SRF's the Most Efficient Means of Delivering Assistance?

From the state and national perspective, there is a definite advantage to loans over project grants. While we appreciate that some municipalities would prefer grant assistance over a subsidized loan, and that you may be hearing this from your constituents and colleagues, there are sound reasons, in terms of economy of national expenditure and efficiency of project financing, for Congress to maintain the SRF funding approach. Most importantly:

Loans Provide Assistance to More Projects: The combination of the state match, the debt service payment, and the additional funds that can be made available by leveraging, creates a loan pool capable of financing a much larger share of project needs than would a grant program.

For example, if the SRF were funded at \$2 billion a year for 12 more years with the existing 20% state matching requirement and a leveraging factor of 2:1 for 60 percent of the Funds (the amount of leveraging now anticipated), a loan pool would be created capable of financing \$133 billion in projects over the next 20 years. The same amount of federal assistance, directed to grants for 55% of the costs of eligible projects, would finance only \$44 billion in wastewater projects—less than one third of the amount that could be financed through the loan program. Moreover, with the loan program, new projects will

continue to be financed after federal contributions stop, whereas the grant assistance program stops with the last federal contribution. With the growing dimension of estimated need for wastewater funding it seems clear that responsible federal programs should be aimed at sustaining and enhancing the loan program. A graphic depiction of this SRF scenario, is attached to my testimony.

Low Interest Loans Provide Substantial Subsidy to the Rate Payer: At a time of impending rate-payer rebellion, SRF below market loan rates can substantially reduce the long-term financing costs for public infrastructure. For example, a \$10 million dollar project financed through the SRF at approximately 250 basis points (2.5%) below market rates, would save the rate payers \$3.1 million in interest costs over the 20 year loan repayment period.

Extrapolating this subsidy to the entire national SRF program, assume that the \$10.7 billion in the loan pool is loaned at an average interest rate of 3.5% against an average market rate for tax exempt borrowing of 6%. The total saving to the borrowing communities and their rate payers over the period of loan repayment would be approximately \$3.3 billion. Some will argue that this still does not compare favorably to a grant subsidy, but one must remember that project grants, on average, cover approximately only 40% of the total project costs. The remaining 60% must be financed by the community, usually through borrowing with tax-exempt bonds at the market rate, which will be several hundred basis points above the SRF subsidized loan rate.

Loans Will Contribute to Long-Term Federal Deficit Control: The permanent funding base provided by the SRF eventually diminishes the demand for future federal contribution. Loan programs begin revolving money for new projects almost immediately and can reduce the structural deficit by at least \$2 billion annually when the SRF is fully capitalized.

Loans Are More Efficient: Experience with the SRFs, thus far, has demonstrated their efficiency as compared to grants. Greater local responsibility under a loan program results in lower project costs, encouraging communities to build to meet their actual needs rather than building to meet grant eligibility. For example, in 1989, the Town of West Monroe in central New York State built a low pressure sewer system and treatment facility using \$650,000 in SRF loan proceeds and a \$45,000 state grant. By contrast, a few years earlier, the same town, anticipating a Title II grant, planned a facility to achieve the same environmental purpose which would have cost \$1,250,000. The record is replete with such examples.

Loans Are Less Bureaucratic: Loans, which are more efficient to manage from a federal and state perspective, significantly reduce the manpower requirements for federal supervision as compared to grant administration. Since 1987, total staffing in EPA's Wastewater and Enforcement Compliance program has been reduced by more than 100 FEES, reflecting, in part, the shift from grants to loan management.

Loans Fund Projects Faster: Because SRFs can fund the total cost of many projects, they remove the need for communities to raise the additional financing necessary to cover their matching share of the grant plus the non-grant eligible components of the project. Moreover, with full availability of financing, projects are being completed up to 50% faster than under the grant program. There is no waiting on grant priority lists or for EPA grant reviews. There is no adage in the construction business that "time is money." Expedited project construction leads to substantial savings.

Also, loan financed construction occurs more quickly because the loan program does not penalize communities that start their projects in advance of a loan. Because SRFs allow loan refinancings, municipalities are encouraged to begin the design and construction phase when they are ready. Costs of planning and design can be refinanced under the SRF program, so the borrower does not risk forfeiting future financial assistance by early project starts.

Since many SRF's have adopted a policy of immediate loan availability, there is no need for borrowers to arrange separate interim financing for the project, avoiding additional financing costs. States with large needs have been able to leverage their available loan funds and are operating under a policy that any project can be financed when it is ready. Leveraging can double or triple immediate available loan assistance.

IV. Is There Need For Additional Subsidy to Small Communities?

Even with interest-free loans, some small communities will still find the cost of loan repayment too onerous because of economic conditions in the community or ex-

ceedingly high compliance costs. In these situations, some additional subsidy may be advisable. CIFA supports authorizing States to use Principal Subsidies to reduce the cost of SRF loan repayments to manageable levels for hardship communities. In essence, a principal subsidy uses interest earnings from the SRF to "write down" a portion of the loan's principal. As proposed in S. 1114, the amount of principal subsidy should be geared to the ability of the community to afford the annual repayment costs.

An advantage of a principal subsidy program as opposed to a direct grant is that it can be run as a part of the SRF, thereby streamlining administration for both the borrower and the lender. We recommend that you give States latitude in how they provide for such subsidies within the context of the SRFs. For example, to protect the corpus of the fund, a state might set aside funds in an earmarked reserve, using the interest on the reserve to pay a part of the service costs on a community's subsidized loan. Other states may prefer to identify the repayment stream from strong credit risks, as a subsidy for weaker loans. In any event, the Committee is correct in limiting the percentage of the Fund that can be dedicated to such subsidies. While such subsidies require more capital from an SRF than an ordinary loan, most states with large rural populations and significant needs, are not currently leveraging their funds through the public bond market. By leveraging their SRF monies for projects in more credit worthy communities, states should have adequate funds available to make direct loans and principal subsidies to projects in their economically disadvantaged communities.

V. Is the SRF Adaptable to Addressing New Pollution Control Needs?

We are pleased that S. 1114 conceives of the SRF as the principal financing mechanism for a range of water related pollution control financings. Indeed, a number of states are already using their SRFs to finance combined sewer overflow and storm water control projects and correction of failed septic systems. A few states have made advances in using the SRF to finance non-point source control projects, and EPA should be encouraged to allow SRF funding for pollution prevention projects including measures for water conservation. While S. 1114 identifies all of these purposes as eligible for SRF financing, it ties them closely to the development of approved water quality management plans. In as much as many States are already financing these important control and remediation measures, I am sure it is not the intent of the Committee to delay such further projects until comprehensive plans have been completed and approved.

The SRF is an adaptable financing mechanism and we look forward to expanding its purposes to include the financing of Public Drinking Water Systems as proposed in President Clinton's new initiative. These water related purposes can all be effectively addressed through the SRF mechanism. In this respect, we would like to emphasize to the Committee the need to maintain flexibility for the states in managing the financial elements of the funds in order to achieve maximum efficiencies in fund management. For example, states should be allowed to commingle the SRF loan repayment stream with other State loan pool repayments including State drinking water SRFs, when authorized. For purposes of leveraging, it would be much more efficient to allow the combining of state and federal program funds into a single pool pledged to the same revenue bonds, recognizing that some accounting of loans made with the proceeds of these bonds would be needed to reassure EPA that the purposes of the SRF program are being fulfilled. We recommend that the Congress instruct EPA to provide maximum flexibility to the States in the management of the SRFs, in keeping with sound financial management practices.

VI. Are There Other Modifications That Would Improve the SD Program?

In addition to reauthorizing the SRFs, a few changes are needed in the Title VI provisions to make the program more efficient and manageable. Specifically, we recommend the following:

Eligibility of land For SRF Financing: As provided in S. 1114, extension of funding eligibility for land acquisition associated with wastewater collection and treatment should be allowed. With present limited eligibility for land acquisition, communities receiving SRF loans now have to find other sources of financing for project related land purchases, causing complications and delays in initiating project construction. Eligibility for land becomes especially important with the increased emphasis on correction of CSOs and non-point source problems where additional lands may be needed for run-off retention.

Administrative Costs: Cost of administering the Fund will continue and should be a legitimate use of a small percentage of each State's Fund, rather than being tied to a diminishing and eventually disappearing federal contribution.

We support the use of a small percentage of the total value of the Federal and States capitalization for purposes of administering the SRF for the life of the program.

Extended Loan Payback Period: For larger projects where principal subsidies are not efficient, States should have the flexibility to extend the loan payback period beyond the present 20 years. We would recommend reserving this benefit for special economic hardship cases tied to the project life rather than a specific number of years.

Technical Assistance: We support the provision in S. 1114 allowing States to use a portion of their matching funds to assist small communities with technical and financial management. From our experience in New York State, we are convinced that this small allocation of funds to technical and financial assistance will return larger dividends in terms of more efficient and cost-effective project design, realistic rate schedules that service debt and provide for adequate operation and maintenance and assurance of basic accounting and financial management practices.

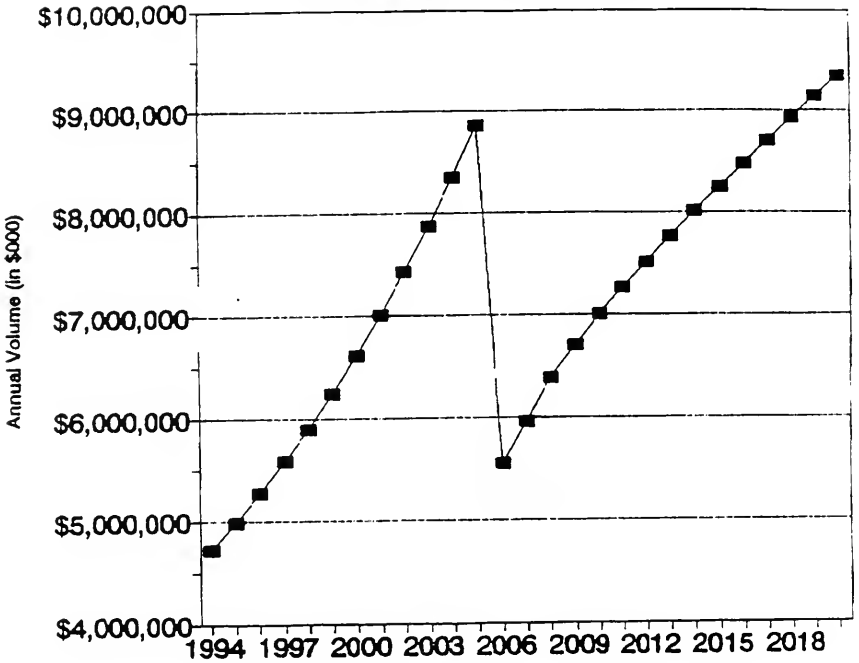
With respect to small communities, however, I would like to raise an issue with the Committee with respect to the need for coordinated federal program. While there are legitimate cases of hardship in our rural and non-urban communities, it is not always the result of an absence of federal funding. In fact, there may be more federal funding available for small community water and sewer assistance next year than for all other communities in the nation. The U.S.D.A., Rural Development Administration budget request has close to \$1.3 billion in grant and loan funding for water and sewer. The Community Development Block Grant program provides grant assistance to small communities for public facilities including wastewater treatment, as does the Economic Development Administration. These programs were all increased under the Clinton FY 1994 budget, while the SRF program was dramatically reduced—leaving the nation in the potentially ironic position of advancing more federal assistance for small communities than for all the rest of the U.S. population. While this may be an anomaly of a new Administration's first effort at budgeting, it highlights a serious problem of lack of federal coordination with respect to clean water funding—a problem greatly exacerbated at the local level by a confusion of uncoordinated and dissimilar federal assistance programs. One useful initiative the Committee might direct, is for EPA to take the lead in undertaking an effort at coordinating a federal approach to small community assistance in the area of environmental facility financing. At present, the States are left with the task of helping their small communities sort out their best option from a welter of confusing and not always cooperating federally assisted programs.

Title II Provisions: CIFA supports the elimination of the grant related requirements in Title II of the Clean Water Act, which are now applicable to "equivalency" projects equal in dollar amount to a State's annual Capitalization Grant. These provisions, which include those defined in 201(b), 201(g)(1), 201(g)(2), 201(g)(3), 201(g)(5), 201(g)(6), 201(n)(1), 201(o), 204(a)(1), 204(a)(2), 204(b)(1), 204(d)(2), 211, and 218, are either redundant or extraneous to loan arrangements under the SRF, and in some cases add months and even years to the time required to move a project to construction.

Water Quality Infrastructure Needs Assessment: Authorization for an expanded needs assessment of all potentially eligible wastewater facilities to provide improved data on infrastructure financing needs is essential. This is an important component of the nation's information base on infrastructure inventory and needs and a measure against which to assess progress and future program direction.

We hope that these observations will be useful to you and the members of the Committee as you work to fashion the provisions that will reauthorize the nation's clean water law, and thank you for this opportunity to testify.

Annual Loan Obligations for SRF Program (Assumes Funding Ends in 2005)



- 1) Annual federal appropriation of \$2 billion, ending in 2005
- 2) Only states that are currently leveraging or expected to leverage soon are included in the leveraging program
- 3) Sixty percent of the program will be leveraged at two times the capitalization amount
- 4) Forty percent of the program will be direct loans at two percent interest rates
- 5) All loan programs are assumed to have a 1% return on equity
- 6) Includes recycling of SRF funds from 1990-93 capitalization appropriations

Prepared by the N.Y. State Environmental Facilities Corporation

TESTIMONY OF KENNETH BRUZELIUS, PRESIDENT, RURAL COMMUNITY ASSISTANCE PROGRAM, NEW PRAGUE, MINNESOTA

Good morning, Mr. Chairman and Members of the Subcommittee. I am Ken Bruzelius, President of the Board of Directors of the national Rural Community Assistance Program (RCAP) network. The RCAP network includes national, regional, state and local offices serving all 50 states and Puerto Rico.

Over the last 20 years, RCAP has provided on-site wastewater technical assistance to small rural communities. The communities RCAP assists are primarily very small communities with populations under 3,500, disadvantaged communities, and those with minority or underserved populations.

For example, Newburg, a community in Missouri with a population of 598, was issued an abatement order by the MO Department of Natural Resources as a result of long-standing, documented problems at its wastewater treatment facility. This enforcement action required that Newburg take immediate action to resolve these problems without consideration of the residents' ability to meet the costs of any improvements. The Midwest Regional RCAP—Midwest Assistant Program (MAP)—of which I am the executive director is currently providing technical assistance to Newburg at no cost to the community. These technical assistance efforts have resulted in marked improvements in the operation of the existing plant. MAP is also assisting the community leaders in Newburg to identify their wastewater treatment needs and to locate resources.

Wastewater Needs in Small Disadvantaged Communities

More than 29 million Americans lack access to basic wastewater treatment and disposal services (EPA 1990 Needs Survey). A study conducted by the North Carolina RCAP, found that nearly 250,000 residents of that state still use a privy, drain their raw sewage into streams, or lack running water. In Virginia, state officials estimate that 50,000 households lack indoor plumbing.

EPA's 1990 Needs Survey Report to Congress on Wastewater Treatment Facilities estimated the current need for wastewater facilities nationwide at \$110.6 billion, and reported that more than 80% of all communities in violation of sewage treatment requirements are in small (rural) communities.

As part of an analysis of wastewater facility financing (*Through the Revolving Door*) conducted by Rapoza Associates for the Center for Community Change, State Revolving Loan Fund (SRF) staff in 45 states were asked to rank existing small community compliance problems in order of frequency. They answered:

- failing on-site septic systems
- poor operation and maintenance
- inadequate level of treatment
- infiltration/inflow.

These responses confirm EPA Needs Survey findings that the use of inadequate on-site septic systems is prevalent in small (rural) communities and that these septic systems need to be replaced by new municipal collection and treatment facilities.

In a recent Government Accounting Office (GAO) report, a Montana official reported that in several small towns in his state raw sewage was overflowing from septic systems into nearby surface waters. Illinois alone has as many as 400 small (rural) communities with failing septic systems and deteriorating wastewater treatment systems. And, Utah state health department officials say they may have to condemn entire small towns because the towns cannot afford to make necessary improvements to their wastewater treatment facilities.

EPA Wastewater Funding and Small Communities

While more than 86% of all local governments serve populations of less than 10,000, a January 1992 Government Accounting Office (GAO) report on the existing Clean Water state revolving loan funds (SRF) noted that small communities are receiving less than a proportional share of financial assistance from the SRFs, given the percentage of population in these communities. The GAO report showed that communities with populations under 10,000 received 24% of the money loaned from the SRFs between 1987 and 1990, while they represented 38% of the total population. Although 70% of all US municipalities have populations of less than 3,500, only 11.7% of EPA Construction Grants were awarded to communities of this size.

In *Through the Revolving Door* several reasons were listed for the difficulties small communities have had in obtaining SRF funds. Many states consider the ability to repay the loan to be nearly as important as a community's health and environmental needs. Many small, disadvantaged communities cannot support the necessary user charges or rate structure to generate sufficient income to repay SRF

loans. Often, projects serving populations of under 1,000 cannot borrow from the SRFs without supplemental grants or principal subsidies. Communities of this size have limited debt service capacity and require 0% or negative interest loans to reduce loan repayments to an affordable level.

Also, while many small system projects are rated high on state priority lists they are often passed over for funding because they are not ready to begin construction. These small communities have part time leadership and need technical assistance to complete the necessary pre-construction studies and preliminary loan requirements. This technical assistance enables the community to plan for necessary improvements to system operations and management practices, set realistic yet affordable user charges, establish reserve funds for equipment replacement and repair, and develop future capital improvement plans to maintain compliance. It also provides small communities with assistance in evaluating and implementing restructuring and consolidation options.

S. 1114—Specific Recommendations

I would like to thank senator Baucus, Senator Chaffee and the Committee for their willingness to avoid the one size fits all" approach of many federal regulations and laws. Many of the amendments to the Clean Water Act proposed in S. 1114—including those related to the State Revolving Loan Funds Program and small and disadvantaged communities—acknowledge the necessity to solve wastewater treatment problems of small communities differently than large metropolitan cities.

RCAP offers the following comments and suggestions for consideration by the Committee:

(1) States should be required to set aside at least 15% of the total SRF (federal and state funds) each year for projects serving small disadvantaged communities as defined in S. 1114 and projects in unsewered small communities with failing (or failed) on-site septic systems. EPA Needs Survey data, GAO report findings, other wastewater needs data, and the fact that these communities have not been successful in obtaining a proportionate share of existing SRF funds readily justify the targeting of these funds.

(2) States should be permitted to use SRF matching funds to provide grants for planning and design assistance and other "up front" costs to small systems whether or not they are successful in getting a loan. S. 1114 now allows for award of these grant funds in the event a small system "does not receive a loan". However, many small communities—particularly disadvantaged communities—do not have monies to pay all of the upfront costs involved in applying for the SRF even if they may be reimbursed for these expenses (a grant) or the expenses can be added to the total loan amount when awarded.

(3) No one project should receive a loan from a state's SRF for an amount greater than 25% of the state's total SRF in a given year. The need for this restriction is obvious. The funds appropriated for the SRF program are insufficient to meet the needs nationwide or in individual states. These funds must be distributed to the greatest number of projects possible and not depleted by one or two large projects.

(4) States should be permitted to extend low-interest loan payments for up to 40 years for projects in small, disadvantaged communities or unsewered communities with failing septic systems. This offers another alternative to making projects in these communities more affordable yet maintains the integrity of the loan fund.

(5) In addition to the technical assistance by states included in S. 1114, provision should be made for national technical assistance specifically targeted to communities with populations under 3,500 and disadvantaged communities. RCAP strongly supports the provision of funds to the states for technical assistance related to Clean Water issues. However, the funds available to the states for this purpose are limited and limit states' abilities to reach very small, rural, and disadvantaged communities. These communities are also the communities least likely to know about the availability of SRF funds or other funding resources, know how to go about applying for funding, or who to contact. Often their only contact with state government has been a result of enforcement actions related to non-compliance, and they are reluctant to approach the state for any assistance. Third party, national nonprofit, technical assistance providers can provide this assistance.

S. 1114 includes important revisions to the existing Clean Water Act, and begins the important national debate on how to best protect our clean water resources and provide wastewater treatment. Thank you for this opportunity to testify on behalf of the small communities RCAP represents. We look forward to continuing to work with you on these issues.

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PETER L. SCHER, STAFF DIRECTOR
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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 WASHINGTON, DC 20510-5175

October 12, 1993

Mr. Kenneth Bruzelius
 President
 Rural Community Assistance Program
 P.O. Box 81
 New Prague, Minnesota 56071

Dear Mr. Bruzelius:

The Subcommittee appreciates your participation in the hearings of the Subcommittee on Clean Water, Fisheries and Wildlife in its review of the Clean Water Act. In furtherance of our review, we have a few follow-up questions for the record. Please provide your answers to Bill Leary at 505 Hart Senate Office Building, Washington, D.C. 20510 by October 29, 1993.

Senator Kempthorne following June 23, 1993 hearing:

- ✓ 1. On the debate now taking place between the wisdom of providing further assistance under the Clean Water Act in loan or grant form, which do you believe to be the most effective form of assistance?

Does your viewpoint apply equally to large and small communities?

- ✓ 2. I note that Davis-Bacon requirements apply to construction of wastewater treatment facilities and other projects funded through the State Revolving Loan Fund. Data generously suggests that these prevailing wage requirements substantially drive up the cost of projects. At a time when local and state governments are financially strapped and struggling to comply with numerous environmental mandates, wouldn't it make sense to exempt these projects from a requirement that mandates wage payments equal to the highest paid in the area where the project is located, rather than a rate dictated by the competitive market?



**RURAL
COMMUNITY
ASSISTANCE
PROGRAM**

Senator Bob Graham
Chairman
Subcommittee on Clean Water,
Fisheries And Wildlife
United States Senate
Committee on Environment and
Public Works
Washington, DC 20510-8175

Dear Senator Graham:

Mr. Ken Bruzellus, RCAP's President, asked me to respond to your letter of October 12, 1993, regarding follow-up to his testimony on the reauthorization of the Clean Water Act. The questions raised by Senator Kempthorne related to three areas: the need for grants and/or loans, the impact of Davis-Bacon requirements, and the treatment of stormwater as non-point sources of pollution in communities with populations under 100,000.

First, as Mr. Bruzellus stated in his testimony, small communities -- particularly lower-income communities -- have not benefited from the existing state revolving loan funds (SRF) for wastewater facilities because these communities can not afford to repay the loans or pay up front costs necessary to complete the loan application process. Grants and/or other financing mechanisms, like principal subsidies currently used in the SRF program in New York state or negative interest loans, are needed to make necessary system improvements *affordable* for these communities.

Grant funds should be made available to small and/or low-income communities to cover the up front costs related to project planning and design, etc., *whether or not* the community is successful in accessing the SRF. These grants might be reimbursed to the SRF if the community received reimbursement from another source (like RDA) for these costs or might be added to the SRF loan total *where affordability is not affected*.

Criteria for any grants or subsidies under the Clean Water Act should be limited to communities that are small (under 5,000) and/or low-income communities.


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Regarding the Davis-Bacon requirements for federal construction programs under the Clean Water Act, Senator Kempthorne is correct when he states that the prevailing wage requirements under this act drive up the cost of projects. This can be a particular problem in small communities where project labor costs can be artificially high due to Davis-Bacon requirements in comparison to local wages and disproportionately increase the overall cost of the project. In small and lower-income communities the "extra" costs of complying with Davis-Bacon often have a negative impact on the affordability of the project and loan.

Finally, while we can not specifically address the applicability of the Coastal Zone Management Act BMPs to other non-coastal zone watershed areas, we strongly encourage watershed protection actions as part of any pollution prevention strategy. Watershed protection activities and plans must be treated as regional, not local, imperatives and small communities within a watershed must be included in any regional watershed planning and protection programs.

Sincerely,



Kathleen M. Stanley
Executive Director

STATEMENT OF PAUL K. MARCHETTI, EXECUTIVE DIRECTOR, PENNSYLVANIA INFRASTRUCTURE INVESTMENT AUTHORITY, HARRISBURG, PENNSYLVANIA

I am Paul Marchetti, Executive Director of the Pennsylvania Infrastructure Investment Authority, commonly referred to as PENNVEST. I appreciate the opportunity to speak with you today about the State Revolving Fund (SRF) program. My testimony will describe the PENNVEST program, which implements the SRF in Pennsylvania, and will also address a number of provisions in S. 1114 that would modify this program, particularly those in Title I.

PENNVEST OVERVIEW

PENNVEST was created by Governor Robert P. Casey in 1988 to address the pressing water quality problems that plagued Pennsylvania at that time. The Commonwealth lead the nation in cases of water-borne disease and a third of our sewer systems were under connection bans or limitations. These conditions were not only environmental concerns but also inhibited economic growth and job creation across the Commonwealth. The Governor saw PENNVEST as a mechanism for addressing both of these issues simultaneously.

PENNVEST was initially capitalized by \$1 billion in funding for both drinking water and wastewater projects. Approximately three fourths of the capacity came from the state, with the balance coming from the federally funded SRF. Much of the state's contribution, and all of the federal contribution, is comprised of revolving funds that are used to make loans whose repayments remain with the PENNVEST program. Thus, we are also able to issue revenue bonds to finance additional projects in the future (\$142.5 million have been issued to date).

Pennsylvania's voters in 1992 added an additional \$350 million in state borrowing capacity to fund more projects. This referendum also expanded PENNVEST's financing authority to include storm water projects.

PENNVEST was created to serve the clean water financing needs of all Pennsylvanians, with a particular emphasis on small systems and rural areas. Pennsylvania has approximately 2,500 community drinking water systems and almost 4,000 wastewater systems. Seventy-five percent of these systems are small (defined as having fewer than 1,000 connections). Taking wastewater systems alone, approximately 70 percent are small. Pennsylvania also has the largest rural population in this country. Of our 67 counties, 55 are considered rural (defined as having a population of 200,000 or fewer).

PENNVEST financial assistance is comprised primarily of low-interest loans, although a small amount (five percent) is comprised of grants funded by state appropriations. The interest rates on our loans range from a minimum of 1.0 percent up to a maximum of four to five percent, depending upon prevailing market interest rates. We average about 2.2 percent. For any individual project, we can provide up to \$250,000 in state funded grants. However, we never allow grants to constitute more than 50 percent of our assistance to a project. We will also extend the term of our loans to 30 years in cases where even a 1.0 percent loan and a maximum grant is not enough to make a project reasonably affordable. We can, of course, only do this with state funds.

The interest rate that we charge a borrower, as well as the amount of grant funding, if any, that we provide, is determined by a comparison between the costs of a project and the financial capability of the project's users to pay for it. Smaller, more economically disadvantaged communities will receive proportionally larger interest rate and grant subsidies than will other borrowers, simply because the typical water or sewer project is large and expensive relative to the user base available to repay our loan.

Since its inception in 1988, PENNVEST has provided \$1.2 billion in funding to 688 drinking water (325) and wastewater (363) projects across the Commonwealth. Of these funds, \$344 million (29 percent) have gone to small systems. These systems have also received 75 percent of our grant funds. From a slightly different perspective, approximately 50 percent of our assistance has gone to rural areas. This is not to say that urban areas have been neglected by this program either. For example, we have made a \$20 million loan offer to the City of Philadelphia. Other urban areas in the Commonwealth have received similarly large loans from PENNVEST. In addition to the environmental benefits that PENNVEST has created across the Commonwealth, the program has also helped create over 13,000 permanent jobs in this state, in addition to approximately 41,000 direct construction jobs.

Looking only at the SRF portion of the PENNVEST program, we have approved 86 SFR loans since December of 1988, for total funding of \$189 million. Of these, 52 loans are closed and the projects are under construction. We have disbursed \$81 million in funds to date for these projects. Seven of our SRF loans are amortized and their repayments, along with those paying interest only, provide PENNVEST with approximately \$84 million in SRF income every month.

COMMENTS ON S. 1114

I would now like to offer some comments on specific provisions contained in S. 1114. These comments will focus on the funding provisions of the bill and will also include one suggestion for an additional provision that I think would improve the SRF mechanism. Let me preface these comments, however, by saying that I believe that the SRF program as it is currently structured has been enormously successful, both in Pennsylvania as well as in states all across the country. I am pleased to see that S. 1114 continues the fundamental, loan-based program that has worked so well to date.

Funding Levels: Section 101(h)

S. 1114 continues SFR funding through FY 2000 at an annual funding level of \$2.5 billion, with the possibility of additional funding if federal deficit reduction goals are met. I am grateful for this continued financial support for the SRF program. It is much needed in Pennsylvania, as I am sure it is in other states. Our wastewater funding needs are estimated to be over \$3 billion (in 1990 dollars). Our needs for combined sewer overflow (CSO) projects alone are \$1.9 billion. With the proposed baseline funding of \$2.5 billion annually, Pennsylvania would receive a total of approximately \$1 billion in federal financial assistance from FY 1989 through FY 2000 under the present allocation formula.

We could obviously use even more funding than that envisioned by S. 1114, and I urge committee members to find as much additional funding for wastewater projects as possible. I understand the motivation for tying additional funding to deficit reduction goals but hope that this restriction might be loosened, if not eliminated, so that communities across the country, particularly smaller and poorer communities, can receive the financial assistance they need to comply with federal water quality standards.

Loan Principal Forgiveness: Section 101(d)

In cases where even a zero interest loan will result in user rates that are excessive relative to project users' ability to pay, states should be able to write-down a portion of the SRF loan principal as a grant. It is appropriate that S. 1114 recognizes this need and provides states with the flexibility to do this. It is also appropriate that the use of principal forgiveness is constrained by limiting it to a percentage of the federal capitalization grant. I am pleased to see that the use of this mechanism is tied to users' ability to pay, which, in my opinion, is the only relevant criterion for sacrificing fund capacity to make loans more affordable through principal forgiveness.

In Pennsylvania, we use grants only if the effect on a system's user rate meets some threshold minimum dollar reduction from what the user rate would be without the grant. We do this in order to avoid using scarce grant resources in cases where they will have limited financial impact. The committee may want to consider a similar limitation for principal forgiveness. Aside from this possibility, however, I encourage the committee to maintain the flexibility that S. 1114 provides the states in using this mechanism.

Land Cost Eligibility: Section 101(a)(2)

When funding a wastewater project with state funds, PENNVEST allows land costs to be included as an eligible item for funding. This is also true for drinking water projects. I agree with the provision of S. 1114 that would make necessary land, easements, and rights-of-way costs eligible for funding under the SRF.

Technical Assistance Funding: Section 101(c)

Providing technical assistance to small communities on management and financial matters is important to the financial health of the SRF program. I agree with the provision in S. 1114 that allows states to use a portion of their state matching funds, up to 2 percent of the federal capitalization grant amount, to provide such assistance.

Leveraging: Section 101(g)

I do not agree with the requirement contained in S. 1114 that all states must leverage some portion of their SRF funds. In Pennsylvania we leverage the funds in our state program, having issued \$142.5 million in revenue bonds to date. We also intend to leverage our SRF funds as funding needs arise. Our experience and needs are not necessarily the same as those in other states, however, and this state-to-state variability should be recognized in this legislation.

While leveraging may allow projects to be funded sooner than they would be otherwise, it does not increase the total amount of funding that will ultimately be available from the SRF. Some states may need more funding now than they anticipate needing in the future, while the reverse may be true of other states. While it is probably true that the funding needs of all states exceed the financial resources available in the SRF program, some states may prefer to conserve their available resources for the future rather than expend them on project funding now. The timing of funding through decisions about leveraging is, in my opinion, better left to the states to determine. Requiring a minimum amount of leveraging from all states eliminates flexibility that I would prefer to see retained in the SRF program.

Extended Loan Payback

An additional provision that I recommend the committee consider for inclusion in S. 1114 would allow states to extend loan payback periods beyond the presently authorized 20 years. In cases where the user rate that will result from a SRF project is higher than what is reasonably affordable, states should be allowed to extend the term of their SRF loans. In PENNVEST, we will go out as far as 30 years. I suggest that as a reasonable maximum although, again, the needs of other states may differ. A reasonable standard for the loan term maximum is the design life of the facility being built. Whatever maximum term is chosen, this allowance for some extension beyond the current limit of 20 years would help ease the financial burden facing small and economically disadvantaged system users.

This concludes my testimony. I want to thank the subcommittee for the opportunity to appear here today and I would be glad to address any questions that you might have.



Commonwealth of Pennsylvania

PENNVEST

Pennsylvania Infrastructure Investment Authority

Keystone Building, 22 South Third St., Harrisburg, PA 17101
(717) 787-8137Governor Robert P. Casey,
ChairmanPaul K. Marchetti,
Executive Director

October 28, 1993

Bill Leary
505 Hart Senate Office Building
Washington, D.C. 20510

Dear Mr. Leary:

I am writing in response to an October 12, letter addressed to me by Senator Bob Graham, as Chairman of the Subcommittee on Clean Water, Fisheries and Wildlife, Committee on Environment and Public Works. That letter transmitted three questions raised by Senator Kempthorne following hearings on S.1114 in which I was a participant. The questions, and my responses, are as follows.

Q #1. On the debate now taking place between the wisdom of providing further assistance under the Clean Water Act in loan or grant form, which do you believe to be the most effective form of assistance?

Does your viewpoint apply equally to large and small communities?

A #1 There is no doubt in my mind that loans provide the most effective form of assistance for the construction of infrastructure projects. It is vitally important that the recipients of public assistance be provided with the correct incentives to economize on both the design and use of the facilities constructed with this assistance. The greater the financial stake that the recipient has in the design and operation of a facility, the more efficient will be the facility's design and the more effective will be its operation.

That having been said, I recognize that there are circumstances where even low, or zero, interest loans may pose a difficulty for a community to repay, particularly when the user base is small relative to the size of the facility that must be constructed. In such situations it is appropriate that grant assistance be combined with low interest loan assistance in order to make the project affordable to users. This is both equitable and sound

loan financing, since easing the burden of repayment with grant funds will improve the chances of repayment of loan funds.

The critical point in the application of grant funds to infrastructure financing is that they must always be provided in conjunction with loan funds. In order to maintain the efficiency incentives of loan-based financing, some repayment must always be expected of the recipients of financial assistance. This repayment should be tied as closely as possible to the users' ability to pay for the services provided. Grant funds are appropriate for closing the gap between this affordable payment and the costs actually needed to construct the facility. It is vitally important to the effective administration of financial assistance that this combining of loan and grant funds be accomplished by a single financing entity, such as a State Revolving Loan Fund.

These observations apply equally to large and small communities, although it is likely that the mix of loan and grant funds will differ by the size of the community, with small communities being in greater need of grant funds to offset relatively higher project costs and resulting user rates.

Q #2

I note that Davis-Bacon requirements apply to construction of wastewater treatment facilities and other projects funded through the State Revolving Loan Fund. Data generously suggests that these prevailing wage requirements substantially drive up the costs of projects. At a time when local and state governments are financially strapped and struggling to comply with numerous environmental mandates, wouldn't it make sense to exempt these projects from a requirement that mandates wage payments equal to the highest paid in the area where the project is located, rather than a rate dictated by the competitive market?

A #2

If local labor markets are truly competitive, which I have no reason to disbelieve, then there will be little or no difference between the "highest paid" wage rate in the area and any other rate. Consequently, the effect of Davis-Bacon requirements should, at least on this argument, be rather small.

Taking a broader view, however, I certainly cannot disagree with the general premise that reducing unnecessary costs involved in designing and constructing wastewater treatment plants would help State Revolving Loan Funds (SRF's) to stretch their scarce dollars to

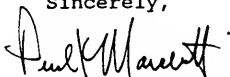
meet a larger amount of environmental and public health needs. All of the Title II requirements involved in financing such projects with SRF monies should be subject to a critical review of their need and effectiveness relative to the costs that they impose on the projects being funded.

Q #3 I understand that S.1114 would allow communities under 100,000 to treat their stormwater outflows as non-point sources of pollution and that where those communities are located in an impaired watershed, a non-point sources best management practices plan would have to be in effect. The model proposed for that plan is that contained in the Coastal Zone Management Act. Could you address the general applicability of the Coastal Zone Management BMP's to other regions of the country with vastly different geography, climate, and hydrology?

A #3 In a word, no. PENNVEST is strictly a funding agency, which causes us to concentrate on the financing aspects of the SRF program. The technical nature of the question you raise, and particularly the broad scope of the applicability of the issue, lies considerably outside my, or my agency's, area of expertise. I can refer you, however, to Caren Glotfelty in Pennsylvania's Department of Environmental Resources (717-787-4686). As the Deputy Secretary for all water programs in the Department's jurisdiction, Ms. Glotfelty is well versed in the issues you raise and could provide a thoughtful and informative answer.

I hope that my responses have been of some assistance to you. If you have any additional questions on the SRF program, please do not hesitate to contact me.

Sincerely,



Paul K. Marchetti
Executive Director

cc: Bernie McShea
Rich Fiesta

TESTIMONY OF RONALD J. MARINO, VICE PRESIDENT, PUBLIC FINANCE
DIVISION, SMITH BARNEY, HARRIS, UPHAM & CO., INC.

Mr. Chairman and Members of the Committee:

My name is Ronald Marino, Vice President in the Public Finance Division of Smith Barney, Harris Upham & Co., Incorporated. I am here today to represent the Public Securities Association as the Committee reviews the accomplishments of State Revolving Loan Funds (SRLF) for wastewater treatment and facilities and undertakes legislative recommendations for the continuation of the program to 2000. PSA is the international trade organization of banks and securities firms engaged in the markets for municipal securities, U.S. governments and federal agency securities, mortgage backed securities and money market instruments.

While Federal financial assistance has been available to assist localities to build wastewater treatment facilities since the 1950's, it is the passage of the Clean Water Act in 1972 that established national standards for pollution control and authorized an \$18 billion grant program to assist states and localities to meet these new Federal mandates. In 1987 when the Clean Water Act was being reviewed for reauthorization there was increasing concern and criticism of the grant program by the Congress. With policy foresight to limit the increasing Federal role and to create a flexible financing mechanism for the states, Congress authorized a State Revolving Loan Fund Program as the mechanism to leverage ever scarcer Federal resources.

While our infrastructure funding deficiency was clear in 1987 and still is today, Congress and the capital markets have made significant steps to start closing that gap. In 1987, the nation's wastewater treatment needs were estimated to exceed \$83.5 billion. Congress authorized \$8.4 billion to capitalize the SRLF's to 1994. All 50 states have undertaken the required legal and financial operational steps to implement the program. A year old survey by the Council of Infrastructure Financing Authorities indicated that, at that time, the States had received almost \$6 billion of Federal capital grants which were leveraged with \$1.4 billion to create a loan pool of \$10.7 billion. This leveraging factor will begin to increase as loan repayments continue and grow over time.

Various studies including EPA's "State Revolving Fund Find Report to Congress" indicate that the dynamic structure of SRLF can provide project funds of between 2.0 to 4.0 times the initial assets. An added benefit can be the loan pool itself. If the loan pool is carefully administered, an SRLF can provide sufficient revenue generation to provide an "internalized" means of credit support, promoting an investment-grade credit rating through the structure of the loan pool without having to rely on state guarantees.

SRLF's are not a bizarre new technology. Their purpose and goal can be best understood within the context of the declining level of Federal aid and the competition between the capital and expense side of the budgets of state, county and municipal government. Their fundamental principal is that SRLF's can provide a steady, stable source of capital dedicated to environmental facilities which will be:

- a reliable long-term financing mechanism which continually generates more capital as more loans are made;
- a structure to facilitate and accelerate the lending of Federal funds;
- a vehicle to make unfeasible or risky projects feasible while investing less public sector funds and thereby expand the overall number of loans and projects;
- and a more self-sufficient financing and efficient decision making process.

Projecting the continuation of the SRLF program, Mr. Chairman, I am aware that the Committee has a concern to make the program more efficient and to increase the velocity of the loans being made and loans being repaid. Of course, your goal is to make loan repayments available sooner for additional loans.

One proposal is to allow or encourage the SRLF to concentrate on construction financing and delegate to the localities the responsibility to secure permanent financing directly from the capital markets or through a state authorized entity. I believe that there is no statutory prohibition to a state creating such a construction loan program under the current law. The existing law provides states with the flexibility to establish varied loan terms including maturities up to 20 years. A state can set loan terms to provide for a construction loan program or decrease the loan repayment term to a period of less than 20 years. While a shorter loan term will increase loan velocity, there would be a negative impact on less affluent counties and municipalities and for those localities whose credit rating will make it difficult or very costly to rely upon the capital markets for an unsubsidized permanent loan. The main goal of the SRLF is to encourage counties and municipalities to construct and/or upgrade existing facilities. The program should retain the flexibility to

permit various loan structures and terms to be offered by each state to the participants based upon the funding needs and revenue resources. The greatest legislative emphasis should be placed upon the Congress' interest in encouraging states to leverage the federal contribution to the maximum level possible. Some states have been more aggressive than others in creatively enlarging the size of their program. Setting some minimum leverage ratio as a goal for program-wide activities is one clear method. Being cognizant and sensitive to the balance between a locality's ability to repay the loan and motivating that same locality to participate should be an underlying principle in setting any leveraging standards. While the Federal government should be involved with the development of the programmatic standards and regulatory framework, the Congress also should promote some discretion and tractability for each state to produce a program that can be successful within the local legal and financial framework.

The most popular and successful structure for leveraging is produced when a state reserves all or a portion of the Federal contribution as a reserve supporting a state debt issue. The proceeds of the issue can leverage the size of the reserve anywhere from two to four times. The reserve acts as a form of credit enhancement, allowing for a higher credit rating and reducing financing costs to the borrowers, the counties and municipalities who are the ultimate borrowers.

A significant limitation that restrains the ability of this structure to maximize the leveraging is the restriction on the investment of the reserve funds. Generally, the reserve fund must be treated as bond proceeds for the purpose of investment yield under the arbitrage rules in Section 148 of the Internal Revenue Code. While the reserve funds do not result from the proceeds of or issuance of debt, states must restrict the yield that these reserves earn. Easing the restrictions on the investment of reserve funds will be a strong incentive to leverage.

There are several other recommendations, some based on the 1992 General Accounting Office study of revolving loan funds, which should be considered by the Committee. Among these are the following:

- Permitting principal subsidies for low income localities that have a difficulty in repaying even zero-interest loans;
- Permitting the SRLF to be used for acquisition of the sites for facilities and a small percentage to be used for administrative costs;
- Reducing the vestiges of the former grant program's mandates for a number of Federal rules and regulations.

Again, I thank you Mr. Chairman and Members of the Committee for the opportunity to discuss these important environmental infrastructure concerns. We appreciate your leadership on these issues.

MAX BAUCUS, MONTANA, CHAIRMAN
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PETER L SCHER, STAFF DIRECTOR
 STEVEN J SHIMBERG, MINDRITY STAFF DIRECTOR AND CHIEF COUNSEL

United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
 WASHINGTON, DC 20510-6175

October 12, 1993

Mr. Ronald Marino
 Vice President, Public Finance Division
 Smith Barney, Harris & Upham & Co., Inc.
 1345 Avenue of the Americas
 New York, New York 10105

Dear Mr. Marino:

The Subcommittee appreciates your participation in the hearings of the Subcommittee on Clean Water, Fisheries and Wildlife in its review of the Clean Water Act. In furtherance of our review, we have a few follow-up questions for the record. Please provide your answers to Bill Leary at 505 Hart Senate Office Building, Washington, D.C. 20510 by October 29, 1993.

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SMITH BARNEY SHEARSON

October 28, 1993

Senator Bob Graham
United States Senate
Committee on Environment and Public Works
Washington, DC 20510-6175

Dear Senator Graham:

I am pleased that you have contacted me on behalf of the Subcommittee to elicit my views on the reauthorization of the Clean Water Act.

I am answering Questions 1 and 2, but I am not responding to Question 3 since I do not have any background or experience in stormwater treatment of outflows.

Question 1

The provision of further financial assistance by the Federal government should continue in the form of loans due to the lack of available resources. The restricted nature of the Federal budget precludes the possibility of any additional resources being directed to Clean Water programs. Thus, the existing funds should be leveraged to the greatest feasible level. The revolving loan fund process permits the possibility of aggressive leveraging to take place. My opinion applies to both large and small communities.

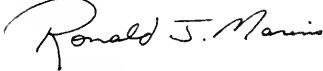
The subcommittee might consider distinguishing between poorer and more affluent communities for the level of subsidy that a state can provide.

Question 2

I would generally agree with the direction of the Question concerning Davis-Bacon requirements. State wage regulations or competitive wage rates should be permitted to apply.

I thank you again for this opportunity.

Sincerely,



Ronald J. Marino
Vice President

SMITH BARNEY SHEARSON INC.
1345 AVENUE OF THE AMERICAS
NEW YORK, NY 10105
(212) 464-6000

REAUTHORIZATION OF THE CLEAN WATER ACT

THURSDAY, JULY 1, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

TOXIC POLLUTION: PREVENTION AND CONTROL

The subcommittee met, pursuant to notice, at 9:38 a.m. in room 406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Lieberman, Chafee, Faircloth, Kempthorne, and Baucus.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. I will call the meeting to order.

This is a meeting of the subcommittee on Clean Water, Fisheries, and Wildlife of the Senate Committee on Environment and Public Works. As you can see, we are using a different format today, one which I hope will generate a level of discussion and understanding of these complex and vexing issues. This is one of a series of hearings that we are holding as part of the reauthorization of the Clean Water Act. Today we are going to be focusing on the issue of toxic pollution prevention and control.

At this hearing, we anticipate that we'll have some genuine disagreement and differences of opinion on important issues. Just in the past few days, for example, U.S. PIRG released a report, using EPA data, which reveals that industrial discharges of toxics into our waters totaled 654 million pounds in 1991, 63 percent of which was released to sewers. This is obviously in contradiction to the original goal of the Clean Water Act that discharge of toxic chemicals be prohibited. We are also told that some of these substances pose so serious a threat to human and environmental health even in small amounts that they must be prohibited.

On the other hand, we've been told repeatedly that the Clean Water Act has worked and is working to reduce the impact of toxic substances on our waters, that toxic substances represent but 10 percent of the remaining pollution problem. One of our witnesses has even likened some of the bill before us to central control policies practiced in Eastern Europe and the former Soviet Union. This is illustrative of the degree of disagreement that exists on the facts and the implications of those facts. It's our hope that in this more informal setting we will be able to narrow the differences.

We have before us a list of difficult issues about which we will hear disagreement. They range from pollution prevention planning to banning certain toxic substances. They include efforts to improve water quality criteria from which the States set water quality standards. They include efforts to develop criteria for sediment quality and to improve the pre-treatment of toxic waste discharge at treatment facilities ill-equipped to handle it.

I want to work off the agenda that you have received, which indicates a series of subissues under the topic of toxic pollution. We have panels of generally four persons per subissue. It is my expectation that we will move directly toward a discussion of these issues. I would ask that those of you who have prepared statements, if you would submit those, and they will be entered in the record.

We are joined today by the Chair of the committee on Environment and Public Works, Senator Max Baucus.

Senator Baucus, do you have an opening statement?

**OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR
FROM THE STATE OF MONTANA**

Senator BAUCUS. Thank you very much, Mr. Chairman. I first want to commend you for your very diligent work. It's obvious that you devote a lot of time and attention to getting this bill through the subcommittee so that the full committee can take it up. As you well know, the Clean Water Act reauthorization is our committee's top priority, and we hope to get the bill reported out this year and on the floor of the Senate.

Mr. Chairman, today's hearing, as you've stated, is particularly challenging. It's about controlling the discharge of toxic pollutants, not an easy subject. For the past 20 years, this has been one of the major goals of the Clean Water Act, and I think it's fair to say that we've made a lot of progress. We've implemented technology-based standards for major industries. We've worked with States to develop water quality standards, and in 1987 we began a toxic hot spot program, which I think has been quite effective.

Some people now say that because of this progress, the committee should turn its Clean Water Act attention elsewhere—for example, to controlling conventional pollutants and diffuse or non-point sources. I agree that we need to do more regarding conventional pollutants as well as non-point pollution. There's a major section in the bill that Senator Chafee and I introduced dealing with non-point. But I do not believe that we should, therefore, slack off on toxics, because it is clear that despite our progress, there is a lot yet to be done.

For example, as you've stated, in 1991—your figure is 654 million pounds; my staff says it's 656 million pounds, give or take two millions pounds—of toxic pollutants were discharged by major industries into the waters of our country. This figure includes only major facilities required to report under the toxic release inventory and does not include all toxic water pollutants. The EPA reported that in 1990 toxic metals and pesticides cause impairment of about 50,000 rivers and stream miles, and this figure is based on reports

from only 41 States, which assessed an average of only half of their waters.

There's growing scientific evidence that toxic water pollution is a significant threat to aquatic species, to wildlife, and to humans. Scientists working in the Great Lakes area found tumors in fish, birth deformities in some species of birds, snapping turtles with deformed legs and twisted mouths. In reviewing these findings, the International Joint Commission on the Great Lakes recently concluded,

When available data on fish, birds, reptiles, and small mammals are considered along with the human research, the Commission must conclude that there is a threat to the health of our children emanating from our exposure to persistent toxic substances, even at very low ambient levels.

The effects of toxic pollutants are not confined to the Great Lakes. Scientists at a 1991 meeting in Racine, Wisconsin, issued a consensus report which stated,

A large number of manmade chemicals that have been released into the environment have the potential to disrupt the endocrine system of animals, including humans. Among these are the persistent biocumulative compounds that include some pesticides and other chemicals in metals.

The scientists went on to conclude,

Unless the environmental load of synthetic hormone disrupters is abated and controlled, large-scale dysfunction at the population level is possible. The scope and potential hazard to wildlife and humans are great because of the probability of repeated and/or constant exposure to numerous synthetic chemicals known to be endocrine disrupters.

I know that some of the toxic control provisions of S. 1114 are controversial. The bill proposes some major changes—that is, consideration of in-plant process changes as a way to control pollution, phase-out of the most toxic and persistent pollutants, a new initiative for pollution prevention planning, and tightening the Water Quality Standards Program. As we discuss these provisions, we need to remember that the long-term health and the vitality of aquatic species and wildlife, and even humans, may well depend on our success in controlling toxics.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you, Mr. Chairman.

The first issue that we will discuss today will be pollution prevention, and I would like to ask if the panelists for that portion of the agenda would please come forward: Mr. Nikki Roy of the Environmental Defense Fund; Anita Dawson, Manager of Environmental Affairs, American Cyanamid Company, representing the Chemical Manufacturers Association; Bruce Baker, Association of State and Interstate Water Control Agencies; and Martha Prothro, Acting Assistant Administrator for Water at the EPA.

As I indicated, it is our request that any opening statement that you have been filed. I would like to make a short stage-setting statement for this portion of our discussion and then ask if each of you would like to make a brief statement, and then we'll proceed to questions and, I hope, interchange among the members of the panel.

Ever since the Clean Water Act was enacted, its focus has been on efforts to control and clean up pollution, with particular attention to toxic pollution. While we have seen statements of success from the act, many believe the remaining problems are going to

take more than an end-of-the-pipe solution. They favor reducing or preventing pollution in the first place. One important benefit of this approach is stated to be that it can prevent the transfer of pollution away from water into another medium, such as air.

Industry says that pollution prevention should be voluntary and flexible and that it is already being practiced. Industry also is concerned about having EPA become involved in manufacturing processes. The environmental community believes that industry must still be prodded into pollution prevention planning and that the public should have access to a summary of those plans.

The legislation that Senator Baucus referred to directs EPA to identify not less than 20 pollutants for which discharge reduction would benefit human health or the environment. Dischargers of such pollutants are then required to develop pollution prevention plans sufficient to cover at least 80 percent of the discharge of each of the listed pollutants. Among the issues we need to address are, do we need to mandate pollution prevention planning, and if we do, should EPA decide who should have to do it?

With that introductory statement, I'd like to first call on Mr. Roy for a brief response to the issue of pollution prevention planning.

STATEMENT OF MANIK ROY, POLLUTION PREVENTION SPECIALIST, ENVIRONMENTAL DEFENSE FUND, WASHINGTON, D.C.

Mr. Roy. First, thank you, Mr. Chairman. It's exciting to be talking about pollution prevention in the context of one of our mainstream environmental laws. I worked on pollution prevention for several years first for the State of Massachusetts, then for EPA, before coming to the Environmental Defense Fund, and for a long time the issue has been sort of an add-on to our existing laws. I think this discussion of pollution prevention in the Clean Water Act is a first.

The issue of pollution prevention planning, to me, is a matter of giving the responsibility to industry of investigating their pollution prevention options and choosing those that make the most sense. The way we set environmental standards in this country, we ask EPA to figure out what constitutes an industry segment and then to decide what pollution control technologies apply to that entire industry segment. By definition, through that approach, we can't develop standards that require specific companies to wring the most efficiency out of their production processes.

Pollution prevention planning such as the type that's in S. 1114, and is in your bill, Senator Lieberman, and has shown up in various States across the country basically puts back to companies the responsibility of analyzing what options for pollution prevention exist within their facility and then asks them to carry those out. Also you were saying in your statement that industry asks for it to be flexible. I think it's extremely flexible in that industry comes up with the right answer, but there is a responsibility that would be formalized through such a planning provision.

Thank you.

Senator GRAHAM. Thank you, Mr. Roy.

I want to express my apology to Senator Lieberman. He came in so stealthily that I did not realize he had joined us.

Senator, did you have an opening statement? I know that you have introduced legislation precisely on the subject that we are now discussing.

Senator LIEBERMAN. Thank you, Mr. Chairman. Since you and I both joined the Armed Services Committee, we've both been more stealthy.

I look forward to the dialog. I'm a strong supporter of pollution prevention planning and have introduced legislation on the subject, and I'm grateful that Senator Baucus and Senator Chafee included this title in S. 1114, and I look forward to the discussion. Thank you.

Senator GRAHAM. Thank you.

Mr. Baker?

STATEMENT OF BRUCE BAKER, DIRECTOR, WATER RESOURCES MANAGEMENT, WISCONSIN DEPARTMENT OF NATURAL RESOURCES, REPRESENTING THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS, WASHINGTON, D.C.

Mr. BAKER. Thank you. First of all, let me say that I'm a strong supporter of pollution prevention. I think the States—in the last 10 years, it is one of the areas that there has been more and more emphasis and initiatives has been in the area of pollution prevention. One of the things we've learned is that we're basically running out of answers with conventional control technologies. There are only so many end-of-the-pipe solutions that are out there, and we're finding to deal with some of the more difficult problems that you have to go to pollution prevention. In addition, it's the cost effective way to deal with the issue.

So I think it's a great move to put this in the Clean Water Act. I think it should be featured in the Clean Water Act. I think the discussion we need to have is exactly how we accomplish it. One of the concerns that I have is if we tie this to permits, we're concerned about the continuing workload and the complexity of getting out municipal permits and industrial permits. There's already a backlog in the majority of States, and I'm concerned about adding to the difficulty of issuing those permits by tying the entire pollution prevention program to that. So I think one of the things to look at and think about is, are there other ways to do this so that it doesn't result in complexity in the permit program?

Another thing to think about and a concern we have is making sure that pollution prevention is done in a comprehensive fashion. I know you're dealing with the Clean Water Act, but pollution prevention plans, from our experience, need to be comprehensive. They need to deal with all media. It does not make sense to concentrate just on the water stream, and more effort needs to be placed on a comprehensive approach to pollution prevention so that we clearly solve the problem and not just move it to another medium.

Also, in doing pollution prevention, our experience has been that some of the greatest successes we've had have been where we've given the industry the charge to do a pollution prevention plan, but we've not prescribed to them exactly how to do it. We've not prescribed which pollutants necessarily. We may suggest that these

are the ones to look at. I'm a little bit concerned about some of the provisions in here which may cause a mindset among some industries to only look at what's required as opposed to going in and doing a comprehensive review of their facility. They really are the ones in those facilities that understand what they're using in terms of products and raw materials, and I think what we want to do is to be careful not to limit their thinking in doing pollution prevention planning.

So I would ask that some thought be given to making sure that we don't get them to look at goals or to look at only certain pollutants which may really result in less aggressive pollution prevention than we've seen in some industries. Some industries where we might have said, "Hey, we'd like to see an 80 percent reduction of pollutant 'X'," have come back and totally eliminated that pollutant from their stream by coming up with innovative solutions.

Other than that—and I think those are sort of how-to issues—I think the direction, I think the emphasis on pollution planning is exactly where we need to go.

Senator GRAHAM. Thank you very much.

Ms. Dawson?

STATEMENT OF ANITA DAWSON, MANAGER, ENVIRONMENTAL AFFAIRS, AMERICAN CYANAMID COMPANY, REPRESENTING THE CHEMICAL MANUFACTURERS ASSOCIATION, WASHINGTON, D.C.

Ms. DAWSON. Thank you, Mr. Chairman.

I'd like to add to the comments that have already been made, and, surprisingly, we all agree on this. Pollution prevention is clearly the way to gain more headway in this field. As you know and had indicated, CMA fully supports voluntary pollution prevention planning. We agree with Mr. Baker that it should be multimedia, not focused on a single medium, and we support the hierarchy of pollution prevention planning, looking first to source reduction and to recycle/reuse and to use treatment where that's appropriate and there are no other alternatives.

We agree that facility-specific plans are a must because of the specificity of our production processes and the raw materials that we use, and we believe as well that the facilities should prioritize the pollutants for reduction and that they should do that not only specific to their site conditions, but also with risk reduction as the primary goal so that the chemicals that they use that are most likely to adversely impact the environment or human health are addressed first.

There are some provisions in the Senate bill that do not coincide with the approach that we would take and that we see as the most effective. We feel the single-medium approach can be a problem in perpetuating the release to other media while working on the water side. The list of 20 pollutants would not necessarily get as much reduction as we could get with individual facilities looking at their pollutants and prioritizing the highest risk for their facilities.

We are concerned, as is Mr. Baker, about the proposed plans being a condition of a permit. That would give the EPA and the States more leverage than we would like to see where we're look-

ing at a voluntary program and voluntary goal setting. In past programs, we've seen goals turning into mandates.

The provisions also do not account for the pollution prevention activities that have gone on by our facilities already, and we feel there should be some recognition of that. There may be some areas where we've already made significant reductions and cannot go too much farther. Specifically, if you look to the TRI data for the CMA member companies from 1987 to 1991, we see a reduction in releases to water of 78 percent.

Our final concern on the pollution prevention planning is about the confidentiality of the information. Our processes are our livelihood and the livelihood of our companies, and we must maintain confidentiality on those issues.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much, Ms. Dawson.

Ms. Prothro?

STATEMENT OF MARTHA G. PROTHRO, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY

Ms. PROTHRO. Thank you, Senator. Among EPA's four or so highest priorities for the Clean Water Act is improvement in our ability to deal with pollution prevention as a way to achieve water quality. EPA fully endorses this approach. We like the idea of facility-specific planning we and completely support that. We think a lot of flexibility is needed in how that's done. We think that industry knows a lot about how to go about pollution prevention planning, and if we can get them to undertake it and move toward it, we can achieve a lot.

I certainly agree with some of the other witnesses that multimedia pollution prevention planning is the way to go, but we support starting here with the Water Program. We think it's very important that we have some authority to address in-plant waste streams. I know this is controversial, but we think this is extremely important. We believe we may have the authority now, but as you undoubtedly know, we are challenged on every effluent guideline that we issue. We have to litigate.

We think that if we're going to deal adequately with some of the more complex facilities, where pollutants in the waste stream can be very much diluted at the end of the pipe, we have to have some authority to regulate in-stream in order to ensure that we're moving toward pollution prevention inside the plant. We believe that effluent guidelines generally could benefit. We may also be able to reduce some of the troublesome litigation that we have if we have an endorsement for the pollution prevention approach to controlling toxic pollutants.

Senator GRAHAM. Thank you, Ms. Prothro.

We've been joined by the ranking Member, Senator Chafee, and also Senator Kempthorne and Senator Faircloth.

If you have any opening statements, we'd appreciate receiving them.

Senator CHAFEE. Well, thank you, Mr. Chairman. This is an interesting format here. This is what we call a level playing field, I guess.

[Laughter.]

Senator CHAFEE. I apologize for being late, and worse than that, I have to leave at about 10:30. I don't have a statement and I commend you for this hearing set-up you're trying here.

Senator KEMPTHORNE. Mr. Chairman, I simply look forward to participating in this round-table discussion. Thank you.

Senator FAIRCLOTH. Thank you. Mr. Chairman, just a question. Is this the bill that allows going into plants for inspection purposes?

Senator GRAHAM. That is a provision.

Senator BAUCUS, would you like to respond to the question of what is in the legislation? Also, Senator Lieberman has another legislative proposal on prevention planning.

Senator BAUCUS. Well, essentially, with respect to the 20 most toxic pollutants, a facility must develop a plan to attempt to reduce those 20 toxics to below what the plant would otherwise produce under the technical guidelines as well as the water quality guidelines, effluent guidelines as well as water quality standards. That plan, though, was voluntary. You must develop a plan, but the provisions of the plan are voluntary. That is, a facility can put in its plan whatever it wants to put in it. If it wants to dramatically reduce the discharge from those 20 toxics, if that plant has any or several of those 20 toxics, it may do so. But if it wants to just remedially decrease the amount of toxics that it discharges, the company may do it.

So the amount that it reduces the 20 toxics that are named is entirely voluntary. It's up to the facility. But that plan is publicized, it's public, so that the public knows or the community or the State or the world knows the degree to which that facility is attempting to proceed further. That's essentially it. So there's a mandatory provision and there's a voluntary provision.

Senator FAIRCLOTH. There's no mandatory provision to it?

Senator BAUCUS. The only mandatory provision is, first—I believe this is in the bill—the EPA must identify the 20 most heinous toxics, and a second matter to our provision is that a facility that gets a permit must, as a condition of that permit, include a plan which reduces further any or all of the named 20 toxics that are provided for by EPA. But the voluntary nature of the plan is that the plan may be as ambitious as the company wants to be. There's no specific part of the plan that the company must reduce its toxics by "X" percent or whatnot. That's entirely voluntary. It's entirely up to the company.

Senator GRAHAM. If I could use that last statement of our Chairman as the commencement of questions, a fundamental issue here is, is Government involvement required in order to achieve pollution prevention, or is there enough incentive within the economics of the private sector to lead to voluntary efforts at pollution prevention?

Ms. Dawson, from the perspective of the CMA, you alluded to the efforts that have already been under way. Do you think they are sufficient in and of themselves? Is any Government role required,

and if so, do you have some thoughts as to an alternative Government role to the one suggested in the legislation?

Ms. DAWSON. Yes, we do, Mr. Chairman. Two issues. Let me first address the question of the Government role and the legislation role. There are barriers right now in the Clean Water Act to pollution prevention in some cases. We feel the first role is to remove those barriers, and I'll review those, and that the second role is to provide more incentives.

Clearly, the major industries and the larger companies know and, as you yourself have recognized, there is money to be saved, there is production to increase, and there's product quality to improve through many of these changes. However, the changes are not simply made. They are complex, they take time, and they take effort, and we believe that the argument that we often hear is that, "Well, yes, some of the larger companies are developing pollution prevention plans," but others should as well, and we firmly believe that there should be more incentives to companies to develop these plans that protect our environment even further than we do already under the existing programs.

Some suggestions of the type of incentives that could help would be market incentives, such as tax credits or accelerated depreciation schedules, streamlined permitting or monitoring requirements, perhaps a longer-term permit for companies that are actively working in pollution prevention—rather than a five-year permit term, a 10-year permit term to allow more effort to be focused on pollution prevention planning than the permitting process itself—alternative compliance strategies to allow the facilities the time to implement, and that goes back to the question of barriers, Mr. Chairman. Right now the anti-backsliding provisions of the act create some difficulties in replacing chemicals. When we change one chemical for another, we have a new discharge that may increase the amount of a chemical, and anti-backsliding doesn't allow us to do that. The anti-degradation requirements also impose restrictions on any increases in discharge.

Although there are variance provisions in the act, many of them do not work that well. Particularly, the innovative control technology variance is a very good concept. It requires a great deal of work to obtain the variance, but only provides us an additional two years, and that two years alone is often not adequate to develop the changes that we need under pollution prevention when we get back into process changes and raw materials changes.

Finally, as I indicated, the compliance schedules of the act give us the same difficulty. The compliance schedules allow time to implement standard available end-of-the-pipe treatment, but not the time that's required to do the research and development work, to evaluate impacts on our processes, to evaluate impacts on our products, to make the in-process changes that we want to make and that you would like to see us make as well.

In conclusion, we need to remove the barriers, and we need more incentives to promote people to do more pollution prevention and increase the program.

Senator GRAHAM. I might just say that the panel on anti-degradation policy is intended to focus in large part on the backsliding provisions, and so I would encourage those who are going to be on

that panel, which includes Ms. Prothro, maybe we could return to this subject at that time.

Senator LIEBERMAN. I was just going to say I think you're on to one of the key issues here, and I want to invite the response of the rest of the panel, because in the legislation that I introduced there's actually less of a role for EPA in pollution prevention. There's a premise that this is one of those cases where if you require the companies to produce plans and publicize progress reports, although not the plans, that there's enough of an incentive that they'll do them without the EPA getting more heavily into it. In fact, some worry that if you create an EPA involvement here that may in itself limit some of the technological work companies themselves might do, and in fact it might delay the presses because of all the responsibilities that EPA has that may mean that the regulations will come out slower. But I'm curious what the other witnesses and EPA representative feel about that, because it's another question.

Senator GRAHAM. Ms. Prothro?

Ms. PROTHRO. Well, I think we've seen over the years, with 51 effluent guidelines having been promulgated, that industry tends not to use pollution prevention approaches, but does tend to go with end-of-the-pipe, so we favor—

Senator BAUCUS. Both a ceiling and a floor, basically.

Ms. PROTHRO. Yes. They tend to go with the model technologies. This may occur some because of the reasons that have been discussed here, but I think our view is that requiring industry to do the plan makes a lot of sense. I also have some concerns about the degree to which EPA should mandate the specific pollutants address or direct exactly how pollution preventing is to be achieved. I think we could serve a very useful clearinghouse function and try to give information to industry and States and others about pollution prevention approaches that are working, but I'm not sure that putting us in the position of prescribing the approaches in any detail will really help, because it may in fact retard some innovation that might otherwise occur.

But, again, I'd reiterate we do support the idea of requiring that the plan be done as part of the permit process.

Senator BAUCUS. If I might, Mr. Chairman, I'm just curious—

Senator GRAHAM. Senator Baucus, and then Senator Chafee.

Senator BAUCUS. The purpose of this provision is to achieve a balance to help resolve the tension between too much restrictive regulation on the one hand and greater toxic reduction on the other, and the attempted balance here, as you well know, Ms. Dawson, is to have EPA name the 20 worst toxics and for a plant who applies for a permit, as a condition of the renewal of that permit, publish a plan which indicates the company's goals and how it intends to reduce its pollutants.

Now, why doesn't that accomplish the objective? That is, we're not telling the plant what to do. We're just saying do something. That's all we're doing. What's wrong with that? Doesn't that give the company infinite flexibility? Doesn't that also help us achieve our goals of greater toxic reduction? Why isn't that a good balance?

Ms. DAWSON. Yes and no. The overall objective—we agree wholeheartedly with the pollution prevention planning and with voluntary pollution prevention planning. My comment is—

Senator BAUCUS. And that's what this is. This is voluntary pollution prevention planning.

Ms. DAWSON. Well, it's called voluntary, but you must recognize that voluntary programs really do become mandates to us.

Senator BAUCUS. But what's mandated? What we're mandating is just that the plant come up with a plan.

Ms. DAWSON. We come up with a plan and submit it with our permit application and make it public, and we have serious concerns about confidentiality issues. I would suggest as well when we talk about the 20 compounds, I think 20 compounds is probably a good number and a good starting set, but we would suggest that you would do better to allow the individual facilities to look at their SARA 313 lists and prioritize those that are the highest risk at that facility. I think one of our panelists indicated—

Senator BAUCUS. What about that, Mr. Roy? Should the company just pick its own under the SARA list, or should it focus on the 20 worst?

Mr. ROY. I don't know if 20 is the right number or whatever, but I think it's certainly appropriate for EPA to give some guidance on what the company should be focusing on.

Senator BAUCUS. That is, to prioritize?

Mr. ROY. Yes, somehow.

Senator BAUCUS. The problem I have is that if everything's a priority, nothing's a priority. It's helpful to set priorities, and, therefore, I think it's important to name the worst first. We can worry about the others later.

Mr. ROY. May I tell—

Senator GRAHAM. Mr. Roy, and then Senator Chafee has a question.

Mr. ROY. I'm sorry, Senator.

Senator CHAFEE. Go ahead. Why don't you answer Senator Baucus' question.

Mr. ROY. If I could tell a short war story, I used to work at EPA, and I worked on something called the Amoco Yorktown Project in which EPA and Amoco picked an oil refinery in Yorktown, Virginia, and studied everything they could about the oil refinery. They went out and they did state-of-the-art monitoring of the emissions coming out of the various production units, which had never been done, apparently, at that level of detail. They took Amoco engineers from Chicago headquarters and people who ran the plant and some of us EPA people and some environmentalists, and they brainstormed about various options for preventing pollution at the plant.

In other words, they were making a huge pollution prevention plan for that refinery, and they discovered things that they had never known about their facility. It was a 35-year-old facility, a Fortune 50 company, and a fairly stable production process. Every hydrocarbon that went up into the atmosphere or went into the Chesapeake Bay was a hydrocarbon they couldn't sell at the pump. So in other words, it was exactly the kind of operation that you would hope would know everything about how hydrocarbons moved

within its facility, but they still were discovering things about the movement of hydrocarbons in the facility.

Now, Amoco's lack of self-knowledge prior to the project that doesn't really call into question Amoco's business decisions, because at some point it doesn't pay to track down every little hydrocarbon for the value of selling it at the pump. What worries me more is that the various regulations that Amoco faced didn't lead them to make those discoveries. The planning provisions of S. 1114 and of Senator Lieberman's bill—especially if you wed them with the whole permitting process—try to lead companies to think about their production process in a fairly structured way. I think it needs to be fairly structured. I think it's appropriate for the priority-setting focus to be determined by EPA.

One of the things that Ms. Prothro suggested a couple of seconds ago was that a lot of the companies tend to go to the model technologies, the reference technologies that are described in the development documents. Actually, in your environmental technology bill, Senator Baucus, which I believe Senator Lieberman is a co-sponsor of, there's a section there that tries to, address the problem created when EPA writes a performance standard around a specific technology the technology is discussed in the development document, and those development document become a bible in the various State agencies that are writing the permits. The verification title of your bill Senator Baucus, tries to get EPA to come up with data on newer technologies and on technologies that apply to specific companies that you wouldn't generally base a regulation on.

For lack of the sort of program that would be created by Senator Baucus's bill, we have companies responding in a reactive way to the EPA regulations and making the ceiling the floor, as you were saying.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. Mr. Chairman, this isn't a part of the bill that I've been active in. Let's see if I understand this.

I'm going to ask you this, Ms. Prothro. Under the current system, there are end-of-the-pipe permits, and we require best available technology in the case of toxics, and if the toxic is too poisonous in the water, then we totally ban it, but outside of that, if it's all right, the water can take it under the best available technology, that's the way the current system is. Am I right?

Ms. PROTHRO. That's basically right. There's also a water quality standard that may be short of a ban, but might require something more than technology-based controls.

Senator CHAFEE. OK. Now, what we're suggesting here is that 20 pollutants be selected that are most important, and then the companies would prepare a plan for—currently, everything's going all right presumably, but they would prepare a plan for the reduction of these or the prevention of them. Now, that plan would become public. That plan would be required and would have to be submitted to the State authority, and then the implementation of the plan is voluntary. But as was pointed out, since it's public, there would be a lot of public pressure to achieve the goals of the plan. Is that correct?

Ms. PROTHRO. Yes. As I understand the bill, a summary of the plan would be made public rather than the detailed plan itself.

Senator CHAFEE. OK. Now, here's my question to you. This is a water bill we're talking about. As a result of this, would there be any substantial additional improvement in water quality?

Ms. PROTHRO. As the result of this approach?

Senator CHAFEE. As a result of this approach.

Ms. PROTHRO. I believe that there would be. I believe that pollution prevention can get us a long way. We've seen this in the pulp and paper industry now. Once the problems were identified with dioxin in the waste stream there, many of the companies began to move toward pollution prevention. They were able to achieve a lot even before regulations were in place. Others did not move forward. But I think the companies that did move forward showed us what can be achieved with pollution prevention, and it has benefited water quality where that's been done.

Senator CHAFEE. Well, I'm interested to hear that, because I'm not sure whether the goal of this is water quality improvement or other environmental or even health goals. I mean, no one will argue with prevention. We all subscribe to that, whether it's in health care or in these efforts. But I think it's clear for all of us to understand exactly what we're doing here.

Do others agree that this will improve water quality?

What do you say to that, Mr. Roy?

Mr. ROY. Yes, I think this could dramatically affect water quality, but I think you're right that there's potential there not just for improving water quality, but improving environmental protection across the board as well as protection of workers. Maybe even protection of consumers if companies are reexamining their products as well as the production processes.

Senator CHAFEE. Well, I'm not fighting against this. I'm a cosponsor of the legislation, an enthusiastic cosponsor with Senator Baucus. I'm just trying to get squared away in my own mind in connection with this particular section whether this should be in a pollution prevention act or whether it should be under RCRA or whether this is appropriately under the Clean Water Act.

Mr. ROY. Look at the way that pollution prevention works at EPA now. We have the main programs—air, water, waste—and we have pollution prevention a separate program. In some very important projects—I think the pulp and paper project is a shining example—EPA is making some real determined steps toward integrating pollution prevention in its core programs. But until we look at the way that rulemaking, permitting, inspections, reporting requirements all impact pollution prevention in our core programs, pollution prevention is not going to be part of the mainstream either at EPA or at the companies that are part of the regulated community.

Senator CHAFEE. I think another point we've got to remember as we move this legislation along, and I think Senator Faircloth enunciated these, is that there is out there on the Senate floor a natural jumpiness about people coming into a plant and the plant owner being told, "This is all voluntary," but it turns out it isn't voluntary. I think we on this side want this legislation to pass, and we've got to be sensitive to that.

Now, clearly, it's not voluntary, preparing the plan. That's mandated, right, Ms. Prothro?

Ms. PROTHRO. Right.

Senator CHAFEE. Now, the next step; the execution of the plan is voluntary, but as was pointed out, whether it's a summary of the plan or whatever it is, the public knows about it. It's released. So there is considerable public pressure on the plant to subscribe to the preventative measures. I'm not saying that's bad. I just want to get it clear in my own mind what we're doing.

Senator GRAHAM. Senator Kempthorne?

Senator KEMPTHORNE. If I may, just to continue on this clarification, Ms. Prothro, it is a voluntary program, but no permit will be issued until they have voluntarily done this plan.

[Laughter.]

Senator KEMPTHORNE. Is that correct?

Ms. PROTHRO. Yes. As I understand it, doing the planning is mandatory. The implementation of the plan and the contents of the plan are voluntary.

Senator KEMPTHORNE. It's an interesting hook.

Ms. PROTHRO. We believe that when companies look at the advantages of pollution prevention, once they do that kind of planning, they'll want to implement it, because there are so many advantages to it.

Senator KEMPTHORNE. Well, I guess my point is, I'm not so sure we should be so free in using the term "voluntary" if in fact it's a requirement. I just think we need to be straightforward.

Senator BAUCUS. Be fair about it. You used the word "it" in two different meanings in that one sentence. I tell my office all the time to avoid pronouns, because they're so dangerous. One definition of "it" is whether "it" is the plan. The other "it" is the contents. I mean, "it" the plan is mandatory. "It" the contents is voluntary.

And it's not designed to be a hook. It's intended and designed to be a way to bridge this gap, this tension between over prescription on the one hand and achieving a very needed reduction in toxic pollutants on the other. We could go the usual way in the Clean Water Act and just start cranking out these water quality standards and tightening down the effluent guidelines and so on and so forth. I think most of us have come to the conclusion that might have some beneficial effect, but it's excessive reliance on remedial approaches. There's a better way to skin this cat that is not only remedial, but also prevention.

It's the hierarchy that you mentioned, I think, Ms. Dawson, and planning process and life cycle planning, I think people who have studied this issue very deeply are beginning to realize that probably is, all things considered, a more efficient way and improves the bottom line of a company's income statement much more than otherwise would be the case. It's certainly the views generally of, say, Frank Popov at DOW Chemical, an archproponent of this general concept, and there are many manufacturing firms who are also ardent disciples, because they believe the primary benefit is improving the bottom line and that a concomitant, adjacent, adjunct benefit is significant improvement of the environment.

So this is not supposed to be some trick or some gimmick, some hook, you may differ with the way it's accomplished, but the intention is to try to achieve this goal this way.

Senator KEMPTHORNE. I have a whole new appreciation of the concept of dotting your "I"s and crossing your "T"s, which now spell "it."

[Laughter.]

Senator GRAHAM. Just for time management, we are going to take another four minutes on this panel, and then we're going to move to the equally exciting subject of toxic bans.

[Laughter.]

Senator KEMPTHORNE. Mr. Chairman, could I just complete that, then? How will we determine, then, the standards of the plan, and what do you anticipate will be the cost of entities accomplishing the plan? And is EPA geared up so that it can review in a timely fashion for turnaround?

Ms. PROTHRO. Well, first of all, we are in the process of costing out various provisions of the bill, and we don't have any cost estimates right now. I think this will be a particularly difficult provision one to cost out, because it is voluntary and because there's so much discretion allowed to industry as to how they develop these plans. So it's going to be difficult to estimate.

Certainly, we would agree with Senator Baucus' statement that in the long run most industries that have engaged in this kind of planning have found that it's actually been less costly than the end-of-the-pipe controls that are necessary in cases where there is no prevention and that we may need to prescribe in regulations.

I guess your other question was whether or not there would be other requirements in the permit and whether we would review the plans. As I understand the bill, there's no requirement that State or EPA permit writers actually review and approve these plans. They are made available. I think one of the benefits to us would be to be able to use some of the information in a clearing-house way, with proper safeguards for confidential business information, of course, but to be able to allow some technology transfer about efficient ways to prevent pollution so that we don't have to have expensive end-of-the-pipe controls.

But we would go forward with our Effluent Guidelines Program and our Water Quality Standards Program independent of this. This would not replace those activities.

Senator KEMPTHORNE. Thank you.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Ms. Prothro, would all plants regardless of size, have to have this?

Ms. PROTHRO. I understand that we are to identify those facilities that would be subject to it. Among the possible candidates would be industrial facilities that his change NPDES permits. These are direct dischargers to the waters and significant dischargers to the sewers. I would guess that we would try to select from within that large category those that have the greatest quantity of toxics.

Senator FAIRCLOTH. It would be any size plant. Another question. How much is this going to cost EPA?

Ms. PROTHRO. Well, we have not costed it out yet. We're in the process of trying to come up with some assumptions on that. It does not seem to be a terrifically costly provision, though, because—

Senator FAIRCLOTH. For you all.

Ms. PROTHRO. For us or for the States.

Senator FAIRCLOTH. How about for the factories?

Ms. PROTHRO. We have not costed that out yet. We're in the process of doing so.

Senator GRAHAM. Mr. Roy, Ms. Dawson, do you have any comments on Senator Faircloth's cost question?

Mr. ROY. On the cost issue, pollution prevention provisions like these are in place in 19 States across the country, including North Carolina, actually.

Senator FAIRCLOTH. I'm well aware.

Mr. ROY. So you might be able to get the cost data from those States. And some of the plans are already in—California, Washington, and Oregon already have the plans, and it might be interesting to get the data from them.

Senator FAIRCLOTH. This is a matter of curiosity; out of the last 15 years, has there been a session of the Congress that EPA didn't come out with a new water regulation? Have you missed a year?

Ms. PROTHRO. We're still issuing water regulations, yes.

Senator FAIRCLOTH. Well, do you have any idea what you've got for next year?

[Laughter.]

Ms. PROTHRO. Yes, I could give you a list.

Senator FAIRCLOTH. I'm through.

Senator GRAHAM. Senator Chafee, you get the last question.

Senator CHAFEE. OK. My question is whether, by going after the 20 most toxic pollutants as regards water impairment, we're in fact going after the worst actors. In other words, it may well be that there are other toxics within the plant that don't affect water quality but affect air which might eventually affect water or health. Does this seem to be a worthwhile exercise when it's solely restricted to those that impair the water? What do you think of that?

Ms. PROTHRO. Well, we're still trying to think this through, but I have some concerns about our identifying the 20 pollutants. I'm not sure that we know exactly how to do that in the most effective way. I believe, as you point out, that there may be some that are perhaps not the greatest causes of water pollution problems right now but may be of concern for other reasons, and if this were the only handle we had on pollution prevention planning as opposed to some kind of a multi-media approach, perhaps we wouldn't get at the most important things. So I'm not sure that having us identify the 20 pollutants is a critical part of this requirement.

Senator CHAFEE. I just want to say a word in defense of the pollution prevention and that it can indeed reduce costs. In our State, where we've been involved with pre-treatment, people trying to avoid the costs of pre-treatment have gone to alternative methods—in our jewelry industry, for example—and we've had some remarkable stories of success in which there's been winners in both ways. It's reduced their costs, and it's been a better process. That doesn't mean we can achieve that in every instance, but I don't think we ought to just out of hand dismiss the subject of pollution prevention. As I've indicated, I have some worries whether, going after the ones that impair water solely, we're going after the really bad actors and how to do it. It's a tough area.

Mr. Roy, briefly.

Mr. ROY. Briefly. I think your concern is probably a well-placed one. In my opinion, the facility planning should be absolutely multi-media. Even if we start from a water concept, it should be multi-media, and the prioritization—I think it would be a useful exercise for EPA to go through that prioritization and help the companies out with that—should consider all media issues as well.

Senator BAUCUS. Mr. Chairman, many of the panelists have mentioned the multi-media need many times. It's sort of the buzz word these days, and I agree with it. But in just one minute, how do we begin to accomplish that objective? I mean, it's Senator Chafee's question. Any top-of-your-head ideas, but hopefully thought through, that would give us clues how to address that?

Mr. BAKER. I think another place is taking into account other environmental media when you take an action, and I think that's one way to do it. At least to put some language in that says "consider other media impacts" when you do—

Senator CHAFEE. You mean air?

Mr. BAKER. Yes. Consider them in the process. If you are going to take an action in water, at least you need to consider. Maybe it doesn't mean you take actions in air or you do an analysis of the air, but at least think about and analyze the fact that if you're going to do this action in water, what might be the impacts on other media, and I think as a minimum some language to that effect in there will help make that happen.

Senator BAUCUS. Ms. Dawson?

Ms. DAWSON. Yes, I would agree that that's a good first step. You have to consider the impacts on the other media so that we're not taking a water problem and moving it into a solids problem by removing a residue or putting more into the air from that. Certainly, the other approach is to go with full multi-media pollution prevention planning and look at all the releases at a facility, not just focus on the water, and by that way get the worst problems first.

Senator GRAHAM. Senator Lieberman is going to have the last word on this topic.

Senator LIEBERMAN. Thank you, Mr. Chairman. I just wanted to say I appreciate this discussion, and I'd like to continue on with the committee and ask my colleagues to take a look at the original bill that I submitted here, S. 980, which does say that every company that has to file under the Toxic Release Inventory has to file pollution prevention plans, multi-media, and there's no role for EPA, really, in the proposal or a quite limited role. No listing of the 20 chemicals or regulations.

The theory here is that the market—and this really goes back to Senator Faircloth's questions. In all the experience that businesses have had, they tend to—not only tend to, they do save more money than they spend on pollution prevention plans. So I have an optimism here that if you just require the companies to do the plans, that the system's going to work and that this is one case where maybe it's best not to have EPA too much involved. But, anyway, I really wanted to respond to Senator Faircloth's questions about cost.

Senator GRAHAM. Thank you very much. I think with the level of interest and involvement, this is going to be a central question

within the reauthorization of the Clean Water Act. Thank you very much.

Mr. Baker and Ms. Prothro are going to be part of the next panel. I would like to ask Carolyn Hartmann, representing U.S. PIRG, and John Stein, Director of Strategic Environmental Studies for Anheuser-Busch, if they would please take a place at the table.

This committee has already heard testimony as to the great harm to human and ecological health from what have been called "persistent and biocumulative toxic substances." These chemicals pose dangers to fish, shellfish, and humans as they move up through the food chain. Environmentalists and others have called for the banning of these chemicals because of the threat that even small amounts might pose. Worse still, we hear that many of these substances are in sediment, where they are disturbed by natural causes as well as dredging and reenter the water column only to expose fish again and repeat the threat to the food chain.

Industry has expressed concern that bans ignore the benefits of chemicals to society and we must balance those benefits against alleged harm. The bill as introduced directs EPA to develop a list of toxic pollutants which are highly toxic or biocumulative and then to develop regulations to prohibit their discharge within five years. The bill allows EPA to exempt categories of discharges where technology or pollution prevention options are not available.

In deference to the time, and we went considerably over our scheduled time on the last panel, I'd like to ask if we could move directly into the questions. Again, your prepared statements will be filed for the record.

Senator GRAHAM. Ms. Hartmann, I wonder if you could give us some examples of substances which you believe have had such a deleterious effect on our human or ecological health that they should be banned and how you would suggest that we proceed to do so.

Ms. HARTMANN. I don't propose sitting before this committee today and coming up with a definitive list of chemicals that need to be banned by "X" date. What we are proposing is that the committee conduct a process of investigating the chemicals that have been identified as problems due to their high toxicity persistence or capability to bioaccumulate in the environment, review those lists, and then set up a committee of experts, as it were, to examine that list and make recommendations as to which substances should be phased out or potential uses of those substances should be phased out.

As a second stage, we recommend that what we call the stakeholders—the industries that are using, producing those substances or the safe alternatives to those substances—sit down and figure out what the time lines are for achieving those reductions.

We do know that there are over 70 forms of dioxins that are discharged into the waterways. They're coming from pulp and paper mills, they're coming from the waste water of incinerators, they're coming from the production of chemicals. Dioxins, as you may know, are the byproduct of a number of different chemical processes which are using organochlorines. That may be a place to start, but certainly there are others in the agricultural industry that we need to start looking at as well.

Senator GRAHAM. Mr. Stein, in your prepared statement, you suggest that you think that these bans might be prohibitively expensive and run counter to other societal goals. Could you comment further on your assessment of the desirability of giving EPA the authority to establish a list of these toxics that should be banned within five years?

Mr. STEIN. Thank you, Senator. As we look at the Senate proposal, we see some strong contrasts there. In title III we see some tremendous flexibility being created through watershed planning, and we in the NEDA project endorse that. The approach there is to look at the problems and then to work out a method to attack those in the most efficient manner.

Looking at title II, however, we see a very different approach there in terms of a very rigid approach based upon stringent command and control, getting very close to industrial environmental policy. What we believe within the NEDA water project is that we should take an approach more similar to that used in title III. That is to say, let's identify the problem with good science and solid monitoring. Let's look at where the problems are, determine that they're really genuine problems, and then before we dictate solutions, let's see what the market can do to bring about solutions that address both environmental and economic concerns.

I think as an example of that, one approach that should be considered is pollutant trading. There certainly, I think, are precedents there within the Air Act. It's a concept that's been around for 15 years in California and is quite successful there. The South Coast Air Quality Management District is taking it a step further with their reclaim program.

I think that if we look at market-based incentives that there is an opportunity to move more quickly and to encourage innovation, and it's possible that we may be able to achieve our solution more quickly and at less cost than through strict command and control.

Senator GRAHAM. Ms. Prothro, there have been other examples in which EPA has been given the directive to develop a list and restrict or prohibit activities. The record of those mandates has been a mixed one. What would you think is EPA's capability, knowledge and administrative, to carry out a directive to identify and then prohibit certain toxics?

Ms. PROTHRO. We have authority now under the act, under 307(a), to ban pollutants, but it's one of many tools in our toolbox that we've used quite rarely. It's an especially difficult process that we have to go through to use that particular tool, and we would certainly support some streamlining of it. We realize that there are probably only going to be a small number of pollutants that we're going to need to address in this way—small compared to the many thousands of chemicals that are being discharged in our Nation's waters, at least.

What we're most concerned about and where I think a ban would be most appropriate is where a chemical is bioaccumulating—going up the food chain—or persisting in sediments so that sediments that are dredged from our harbors are not easily disposed of. These kinds of pollutants are a particular problem in estuaries and in the Great Lakes and other lakes, and for those a pollutant ban sometimes is really an appropriate response.

Now, many of the most toxic chemicals and most persistent chemicals that we find in fish and sediments are already banned to some extent—chlordane, DDT. Dioxins are an unintended byproduct of other processes. A pollutant ban may not get at those too well in a lot of circumstances. Mercury is often released into the air. These are the pollutants that we see most often causing these persistent bioaccumulation problems, but there are other chemicals that are cause for concern, and others may emerge if we learn more. So strengthened authority in this area would be, I think, a good tool to add to our toolbox.

Senator GRAHAM. Mr. Baker, if you could, from the State's perspective.

Mr. BAKER. I would agree a lot with what Martha said. The first place to look for the substance is in the fish and in the sediment. The things that are showing up in fish that are causing public health concerns, the ones that are moving up the food chain, are clearly the ones that any additional quantity of release is going to be a problem.

I've been heavily involved in the Great Lakes and trying to manage the Great Lakes issues, and we've come to the conclusion in the Great Lakes discussions, particularly with Canada, that it makes sense for certain substances to look at a ban. No longer can you try to deal with these issues through end-of-the-pipe or dealing with just the point sources. I think the issue that we're going to have is that doing a ban is going to have to be, in some cases, broader than just the water discharge, because, for example, the things that we're seeing that are causing problems in the Great Lakes are also coming from air sources and other products that contain those substances.

So it may be a good start to look at water, but it certainly has to be considered in a broader context in order to really be effective for the ban. Bans are very difficult to do. It can be very hard to be 100 percent successful, and I think that it ought to be carefully used so that the list of substances where there are bans is limited to ones that are really in a category where they need to be dealt with in that fashion and not try to have an extensive list, which I think will dilute the effectiveness of a ban. But, clearly, I think there's a role for bans when you're dealing with certain substances.

Senator BAUCUS. Mr. Chairman, I've got to leave.

Senator GRAHAM. Senator Baucus?

Senator BAUCUS. Mr. Stein, do you agree with the concept, or do you not, of bioaccumulation—that is, that there are some chemicals that do bioaccumulate over time and cause a greater problem than would be at the initial level of emission? Do you agree with the concept?

Mr. STEIN. Senator, I think that's been demonstrated.

Senator BAUCUS. OK. Next question. Do you agree with the concept that there may be some pollutants that over time should be banned as a consequence of bioaccumulation?

Mr. STEIN. I think it's something we have to look at very carefully. Over time there have been very few substances that have been subject to the equivalent of the death penalty. I think it's something we need to go at very carefully and very cautiously to be certain that we have adequate substitutes for those and that we are

not creating one problem by eliminating another. Right now in our industry and in related industries we're looking at the issue of what we'll do without methylbromide as a fumigant.

Senator BAUCUS. I understand. That's very true. It's a question that's reasonable and responsible, but nevertheless, pushing steadily onward, we have banned CFCs, for example. Everyone agrees that it had to be done, even though a few years ago various companies said, "Oh, gee, you can't find substitutes, and it's incredibly expensive," and so on and so forth, but we are developing substitutes. There are some side effects of some of these substitutes, that's true, but I just think it's important if bioaccumulation is a problem that we push very hard and very aggressively and responsibly to try to find those substitutes, and we should not shirk or slacken in our steadfast devotion to that goal.

I'm glad you agree with the concept. I think that helps advance the ball. The next step is to make sure we do it responsibly.

Thank you.

Senator GRAHAM. Senator Lieberman, do you have a question?

Senator LIEBERMAN. No thank you, Mr. Chairman.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. No, not right now.

Senator GRAHAM. Mr. Stein, you mentioned the idea of encouraging industry to voluntarily look for ways in which to limit or restrict the use of these items. Could you discuss further what is the current state of industry's efforts to identify and limit or restrict or prohibit the use of bioaccumulative substances, and what might be done to accelerate that industry initiative?

Mr. STEIN. I think Ms. Dawson has talked about a number of incentives already this morning that would be useful to industry in terms of encouraging industry to pursue alternatives to certain toxic materials. Certainly, the issue or the concept of being able to trade pollutant loadings also would create an incentive for industry.

I would say that in the industry today we have a strong focus on total quality, and that's been extended into the environmental area as well. In our own experience, we are looking at ways to empower our employees and to drive the focus on pollution reduction down into the organization and to challenge the capabilities of our employees to come up with new concepts, and we've been significantly successful with that in everything from water conservation to solid waste reduction. I think we need to recognize the efforts that industry has made here and to encourage cross-fertilization between industries to maximize the benefits from that effort.

Senator GRAHAM. Yes, Ms. Hartmann?

Ms. HARTMANN. I think that while there are industries in this country that are taking the lead and certainly trying to move away from using the most toxic hazardous substances, unfortunately the vast majority of companies are not playing that role. There was a study recently done by a group called Inform, which went in and looked at a number of chemical industry plants, and they found that despite the fact that those facilities could put into place a number of source reduction and toxic use reduction changes in that plant and basically pay for those changes in a very short period of

time, that the majority of companies are not making these kinds of changes.

We would argue that with the vast majority of chemicals, the approach that Senator Lieberman is putting forward, the pollution prevention planning approach, is appropriate, but that with some substances that are extremely toxic, persistent, and bioaccumulative, we really need to take a more aggressive approach and set outer limits for the time period that those substances can be used.

We saw with the example of the CFCs that industries actually slowed down their research in looking for alternatives immediately after one use of CFCs was reduced, and that's the aerosol use, and the money going into research only increased again when the pressure began to build for a phase-out. So a discussion about a phase-out definitely seems to be encouraging industry to look for the safer alternatives.

Senator GRAHAM. Senator?

Senator FAIRCLOTH. I'll start with Ms. Prothro or anyone that wants to answer the question. Could you give me a specific example of a recent health problem to humans caused by the discharge of a permitted facility? What we're going after is, can you tell me of a specific problem caused these toxins?

Mr. BAKER. I think the best example that we have is the Great Lakes with PCBs. Now the manufacture of PCBs has been prohibited, but PCBs are still being generated from some sources, air sources and water sources, and they're making their way into the fish. There have been studies that have been pretty conclusive in terms of their effect on wildlife and also on human health.

Senator FAIRCLOTH. Is that still happening today?

Mr. BAKER. Yes, there are active discharges of PCBs—

Senator FAIRCLOTH. Into the Great Lakes?

Mr. BAKER. Into the Great Lakes. Absolutely. And that's of serious concern.

Senator FAIRCLOTH. Well, isn't that against the law now?

Mr. BAKER. The problem is that you can set a standard, and the standard assumes that there's some safe level of a particular substance, and that's what we're charged to do in the Standards Program. What happens with the Great Lakes is you have some systems that are overloaded with that particular substance, and, therefore, you really need to have another tool that says not only do we need to eliminate further release into the Great Lakes, but we probably need to find ways to actually destroy and reduce the PCBs that are there.

Senator FAIRCLOTH. Are they coming from industry, or are they coming from runoff water?

Mr. BAKER. They're coming from a variety of different sources.

Senator FAIRCLOTH. How are you going to stop them from runoff water?

Mr. BAKER. Well, I think you need to go back to the sources. If they're coming from storm water, likely it's from an air source, through air deposition, where they're making their way into the storm. Go back to the root source and make sure that we eliminate it.

Senator FAIRCLOTH. What's the level of PCB that you're permitting in waste water?

Mr. BAKER It's a very low level, and basically it's at level of detection.

Senator FAIRCLOTH. What level is that?

Mr. BAKER. It gets down into the parts-per-billion level in terms of level of detection, but—

Senator FAIRCLOTH. Wait a minute now, because I want to understand this. It comes down to parts per billion that you can detect to now.

Mr. BAKER. Right.

Senator FAIRCLOTH. If you get levels above that, you can't turn the water loose. Is that right?

Mr. BAKER. Right.

Senator FAIRCLOTH. Now, what would this law do? You'd get tighter than that?

Mr. BAKER. Yes. It would go back into the system, and there are places where you can go back further into an industry and detect it. We're only measuring at the point of discharge.

Senator FAIRCLOTH. What are you going to get down to, parts per trillion?

Mr. BAKER. We basically want to eliminate it altogether so there are no PCBs.

Senator FAIRCLOTH. Is it possible to eliminate?

Mr. BAKER. Yes. In some cases, it is; in other cases, maybe not.

Senator FAIRCLOTH. Let me tell you something I did with PCBs. A very bad company that was rebuilding power transformers in North Carolina dumped miles of it on the shoulder of the highways. Miles of it. For all intents and purposes, we stopped the highway program. We moved PCB material. Millions of dollars was spent digging it up, all of it, many hearings were held to decide where we could put it, but finally, it was removed. We had hardly gotten it moved when the EPA said it really wasn't as bad as we heard it was and we probably committed more problems moving it and hauling it than we would have leaving it there. You told me to move it, and we moved it. Then you said, "It really wasn't necessary to move it. You could have left it there."

Ms. PROTHRO. Senator, I think part of the problem is that by the time we see PCBs in the discharge pipes, there's been a lot of dilution. I think what a ban would help us to do is to go back to the source, as Mr. Baker said. When you go back to the source, you may well find it in levels above detection, and you can stop it there before it mixes with rain water and other things that will wash it off into the receiving waters.

Mr. BAKER. Let me just add that the parts per billion is the concentration. When you look at mass loading on an annual basis, there's something like 290 or 300 pounds of PCBs that are being released in the Great Lakes, which doesn't sound like a lot, but it's enough to cause fish—

Senator FAIRCLOTH. Two hundred pounds are being released from where?

Mr. BAKER. From all sources.

Senator FAIRCLOTH. Into the lakes?

Mr. BAKER. Into the Great Lakes.

Senator FAIRCLOTH. All five of them?

Mr. BAKER. Yes.

Senator FAIRCLOTH. How many pounds?

Mr. BAKER. Two hundred and ninety pounds, I think.

Senator FAIRCLOTH. How often?

Mr. BAKER. That's on an annual basis.

Senator FAIRCLOTH. A year.

Mr. BAKER. But that's enough PCBs to cause fish advisories so that people cannot eat the fish in the Great Lakes because those concentrations accumulate in the system. The system is already loaded, so you're dealing with a system that can't tolerate any additional releases.

Senator FAIRCLOTH. All right. Could you give me a specific example of a human affected by eating a PCB-laden fish out of the Great Lakes?

Mr. BAKER. I'm not an expert in the area, but there are studies that have been done—

Senator FAIRCLOTH. I thought you were the expert.

Mr. BAKER. In the area of human health. But there are—I can tell you of the studies that have been done that have shown that there have been effects on babies as a result of mothers that have been breast-feeding their babies milk that has PCBs in it, and there are questions about effects at birth, and there are questions about the ability of those babies in terms of their performance over time.

Senator FAIRCLOTH. Would you send me a copy of the studies?

Mr. BAKER. I'd be glad to.

Senator FAIRCLOTH. All right. I'd like to see them. Thank you.

Senator GRAHAM. Thank you very much, Senator.

Thank you very much to the members of this panel.

The next panel is effluent guidelines. Again, Mr. Baker and Ms. Prothro are going to continue to advise us. They'll be joined by Ms. Jessica Landman, representing the Natural Resources Defense Council, and Ms. Anita Dawson, Manager of Environmental Affairs of American Cyanamid Company, will return.

Senator GRAHAM. The Clean Water Act provides for technology-based standards called effluent guidelines, which establish nationally consistent minimum levels of treatment for categories of point sources. The act also provides for water quality standards to be used where the technology-based standards fail to achieve water quality goals. More than half the existing effluent guidelines and new source performance standards have not been changed or updated in over a decade, even though they are supposed to reflect improvements in technology.

This legislation would allow EPA to include in these guidelines source reduction practices, including changes in production processes. In addition, effluent guidelines are to prohibit or limit cross-media transfer of pollutants where, technologically and economically, those are achievable. The bill requires EPA to review existing effluent guidelines and to revise them whenever there have been significant changes in factors relating to the guidelines, including advancement in treatment or source reduction practices. The bill also directs EPA to assess fees in order to offset the full cost of developing and publishing guidelines and standards. EPA estimates that it costs \$2 billion to \$5 billion to develop a new guideline.

Industry has indicated strong opposition to some of these changes, finding them to interfere with the manufacturing process.

Ms. Dawson, I understand that industry is concerned about the provisions of this bill, such as those that would allow EPA to revise guidelines to be updated to reflect new technology, because they may have just made a substantial investment to comply with the standards, only then to find EPA changes the rules. That is an understandable concern. I would be interested in your further comments as to the effluent guidelines provision of this legislation and any recommendations that you might make as to how the National Government should deal with the issues that have led to this set of proposed changes.

Ms. DAWSON. Senator, you're right, we are concerned. We're very concerned about this effluent guidelines provision. I think that we need to recognize that there are existing programs in place. We already have the Effluent Guidelines Program controlling our discharges as well as water quality base limits, and the Effluent Guidelines Program—both programs are continuing to evolve. Effluent guidelines are reviewed on a periodic basis, and in fact when EPA looks at our processes during effluent guidelines development, where we are using pollution prevention practices, those are incorporated via the lower numbers in our discharges that EPA sees.

So I'd like to differ with Martha somewhat on her comment that we don't have pollution prevention now through effluent guidelines. We feel strongly that we do. We do have pollution prevention practices in our plant. Perhaps not 15 years ago, but currently we are moving further toward that, and they should be included in the effluent guidelines process as it moves forward.

In regard to the provisions for effluent guidelines in this Senate bill, we are very concerned that they require EPA to rely on and require source reduction measures and practices that include changes in the production process, the products, and the raw materials that we use. This completely disregards the complexity of these changes. We feel, as does EPA, that they cannot practicably define measures and practices, and I'll tell you why we think EPA feels that way, and we also feel that these decisions about manufacturing, about our products and processes, should be left in the hands of the industry so that we can control our own destinies and complete on a global basis.

Let me give you an example of a recent pollution prevention project that we're working on in my company right now. We're making a relatively simple change in one process step. It's a batch oxidation reaction. We're changing it to a continuous reaction. This is reducing our pollutant loading by 50 percent, it's reducing our volume by 25 percent, and it's also helping us in increasing product yield and quality. So we certainly have incentive to move forward through this. But it hasn't been simple. It's taken more than six months of work in laboratory development, in small-scale testing, and in full-scale trials to evaluate the impact on every process step, to evaluate our analytical methods as we go and revise them so we can have full knowledge of the products and the byproducts in each process step, and finally going into a full-scale trial and working this out in the plant.

In addition, let me just comment on the people that are involved. It's involved process chemists, research chemists, analytical chemists, lab personnel, process engineers, and process chemists. It's a very involved, complex process to make those type changes, and we're concerned that EPA cannot really do that for us. There are thousands of chemical processes that exist, and when you get two chemical processes such as many of ours that we are the only company working with, it's just incomprehensible for us to see that EPA could do that for us.

The reason that I say that we feel that EPA also has a concern on this issue is that in the organic chemicals effluent guideline rule that was issued on May 28th, EPA had looked at requiring recycling, and they determined themselves that the type of major research and development effort is far beyond the scope of what they can practicably accomplish, and that's a statement from the preamble to that rule, Senator.

Senator GRAHAM. Ms. Landman, what do you believe are the principal defects in the current law or implementation of effluent guidelines?

Ms. LANDMAN. The changes that are recommended in your bill, we think, represent important evolutionary changes to get at some of the defects in the way that the law has been implemented to date. Problems that we have identified include the failure of EPA to take steps that would prevent industry from selecting a waste water treatment technology that, for example, could have a cross-media impact, such as a technology that results in the removal of a substance from the water only to transfer it to the air. The changes that would be made in the law by your bill that would authorize EPA to prohibit the selection of a waste-shifting technology would get at that problem.

Another very important problem has been EPA's failure to update and revise these regulations over time as technology has evolved. You mentioned earlier that some of these regulations are 20 years old or 10 years old and need to be revisited. It's very important that issue be addressed both by providing the agency with adequate resources and by providing a clear mandate to plan for and then carry out those plans for revising the guidelines on a regular basis.

The underlying philosophy of effluent guidelines was, at the time this law was enacted, that technology will continue to evolve and that we should be discharging to the waters only so long as we lack the technological capability to achieve our zero-discharge goal. That's why we think that the evolution of guidelines over time is so essential, and other changes in your bill that would be made to the law that focus on the need to identify zero-discharge technologies and select them where they're technologically and economically achievable also, we think, would help push the agency in the direction that they have been inadequately focused on before.

We thought that there were options, for example, to select zero-discharge technologies, at least for new sources, perhaps in the organic chemicals industry, and we found that the agency did not adequately address the availability of those zero-discharge technologies that really could close the loop potentially in certain catego-

ries. Your bill would help to move things forward in that direction, so that's another very important change.

Senator GRAHAM. Ms. Prothro and Mr. Baker, Ms. Landman has just outlined some of the defects, as she sees them, in the current law. To which degree are those matters of the law itself or the resources available to the agency or the available scientific capability to deal with questions like shifting across media?

Ms. PROTHRO. I guess I see them as sort of intertwined. To the extent that we can streamline and improve the effectiveness of the law, then we'll have more resources to devote to producing effluent guidelines. We do appreciate the bill's attempt to give us a new resource base for the Effluent Guidelines Program through the fee. We're still looking at that and haven't taken a firm position on it, but certainly it's an expensive program. We gather a lot of data, we look at a lot of different industrial facilities, we have to anticipate litigation over virtually every industrial category that we regulate, and that means we have to have an extensive record to defend the decisions that we make.

Now, this is appropriate. We're not arguing that we shouldn't have to do that. I'm just saying it's an expensive program, and sometimes it takes a long time. Sometimes I think if we had the single, unified standard that the bill proposes and some of the other improvements that the bill would give us, we could move faster and meet our schedules better.

I did want to respond to Ms. Dawson's point about some plants doing pollution prevention now without an EPA mandate. We certainly recognize that, and we're not arguing for the authority to prescribe process changes. We're merely saying it would be helpful to us in defending ourselves in this type of litigation and in developing the guidelines to have clear authority to consider process changes and other pollution prevention methodologies as a basis for our guideline limit instead of focusing just on end-of-the-pipe controls. Once the limit is set, the industry would still have flexibility to come into compliance by a means that they select that's most effective.

We have in fact required recycling in a number of cases. We have set zero-discharge limits on occasion. We're moving more and more under current authorities to using pollution prevention as a basis for the guidelines, but having the law improved in this way will help us to defend that approach and maybe avoid some of the time-consuming and resource-intensive litigation and dispute that we go through now.

Senator GRAHAM. Mr. Baker?

Mr. BAKER. Well, the States strongly support these provisions. We have really been the victims of the lack of progress on effluent guidelines, because what you have then is a situation where each State is trying to move things forward on a State-by-State basis and on a discharger-by-discharger basis rather than approaching it across the country on effluent guidelines. So I think the provisions in the act are appropriate.

I won't repeat the comments that were made by Ms. Landman and Ms. Prothro. I think they're excellent comments. We also see the need to make sure that resources are there at EPA to make this happen. But we want to see them done, we want to see them

kept up to date, we want to see them done in a timely fashion. We think we need to have effluent guidelines to be there alongside water quality standards in terms of managing water quality.

Senator GRAHAM. Ms. Prothro, you mentioned the cost and other administrative concerns relative to this area of the legislation. Do you believe that the level of fees that would be allowed to be charged and the time to carry out the various requirements are administratively reasonable?

Ms. PROTHRO. Well, we're still looking at the fees provision. I guess our primary concern there is the collection mechanism. Because many of the dischargers that we would be regulating discharge to sewers, we think we'd have to work out arrangements with localities and States. We need to talk with the Treasury Department about how that would all work. So we're still looking at that, and I'm afraid I'll have to get back to you. We look forward to working with you on it.

With regard to the time lines, to some extent I think the bill really improves our ability to meet mandatory time line; thus, we think that it's more reasonable than current law. I don't want to guarantee that we'll always be able to meet even these new deadlines, because that does depend largely on the resources available to us, the complexity of the industries that we're regulating, and the degree of controversy that arises in the rulemaking process. But we think this moves in the right direction, gives us a better framework in which to administer the program.

Senator GRAHAM. Ms. Dawson, I understand that industry has raised some objections to the provisions that would allow EPA to include source reduction in effluent guidelines. You alluded to that. This discussion is somewhat a reverberation of what we talked about earlier in the prevention of pollution. Do you believe that this is an excessively intrusive step into the internal operations of a business?

Ms. DAWSON. Yes, Mr. Senator, we believe that this is excessively intrusive. As I indicated in my earlier comments, our processes are complex, they're very specific, and we don't believe that it is appropriate for EPA to get that involved, nor do we feel that they would have the capability of doing that. We have specific people that have worked on these processes for years that work on these pollution prevention programs. There's a great amount of expertise that must come from the industry itself in looking at those programs.

I found it interesting that Martha, in her comments, stated that EPA would like the authority to consider pollution prevention and source reduction in setting their effluent guidelines. Mr. Senator, we feel they already have that authority to consider, and our concern with this bill is that it doesn't require them to consider. It says that they must rely on and require those changes.

We don't see that as a feasible mechanism for EPA to tell us to go into a specific process and make a change without using our own expertise to develop those changes, because many of the pollution prevention ideas that we try and work on simply don't work, and I don't know how EPA would be able to tell which ones will work in our processes and which won't. These changes can have and do have significant impacts on our products. They can change our product quality slightly that would ruin our sales. No one

would want that product any longer with the change in characteristics.

So they do matter intensely to us, and we're very concerned that we remain globally competitive in these very difficult times where we're pushing as hard as we can with TQM. We are practicing pollution prevention to improve our processes as well as to prevent pollution, because it's the thing to do. We live near our plants as well. We're not interested in being polluters, and we really don't feel that we are, Mr. Senator.

If I may, I'd also like to just comment a moment on the effluent guidelines themselves and the process of continuing to develop them. I was a little surprised—I do focus on my own company, and in my own company we just had organic chemicals guidelines, our pesticides guidelines are coming, and pharmaceutical guidelines are also coming, so it was my impression that the guidelines were being revised, certainly the ones that impact us, and we have made significant progress in the chemical industry, as I said earlier, on reducing releases to water, as shown in TRI, by 78 percent between 1987 and 1991.

So I see that the existing program has the authorities needed, and it is working, it continues to tighten down, and on top of the technology-based standards, we have water quality standards that EPA sets to ensure that we're not deteriorating water quality.

Senator GRAHAM. Ms. Landman?

Ms. LANDMAN. I'll respond briefly, if I may. The Effluent Guidelines Program, as was mentioned earlier, is a floor—where the baseline of technology ought to be nationally. I think the earlier discussion this morning on pollution prevention and the need to have facility-specific pollution prevention planning really highlighted the extent to which these two programs need to work in concert.

Effluent guidelines are not going to in the future, any more than they have in the past, go into each and every single plant and dictate anything about how that production process works. Instead, they will look to the releases from that plant, and they will apply on a category basis, not on an individual facility basis.

I think that what we heard this morning was that even after facilities have achieved that national floor, which is where the effluent guidelines are going to take them, and that floor is going to, we hope, be continuously moving us toward our goal of zero discharge, there will still be plenty of room for innovation and facility-specific activities to occur in a pollution prevention planning process, which will remain the facility's own decision making process.

Senator GRAHAM. Are there any other comments by members of the panel on this issue?

[No response.]

Senator GRAHAM. If not, thank you very much.

The next subject is water quality standards. Ms. Prothro, Mr. Baker, and Ms. Landman will continue, and then Mr. Jeffrey Silliman, Manager, Environmental Affairs, Milliken & Company, Spartanburg, South Carolina, representing the American Textile Manufacturers Institute.

Two days ago the subcommittee received a report from the General Accounting Office. This report was critical of EPA for its fail-

ure to update water quality criteria documents. These documents are used by the States to develop water quality standards, which are the used to set permit limits to achieve the standards. It is at the heart of the pollutant discharge control.

GAO reports that nearly all the criteria for priority pollutants that have been developed were developed over 10 years ago, and few have been updated since. Worse, GAO reports that while EPA acknowledges that there are serious impacts from pollutants not even on the list, EPA has no plans to modify or expand the priority list to include them. The final legislation seeks to address this problem by requiring EPA to develop a plan and schedule for the issuance of criteria within two years of enactment and every five years thereafter.

With respect to toxic substances, the bill attempts to speed up the process by declaring that new criteria documents to water quality standards be enforceable on the date of publication unless the State objects and adopts an alternative standard within three years. States are to adopt standards based on criteria within three years of the publication of the criteria.

Ms. Landman, I wonder if we could start again with a question that I asked you on effluent guidelines, and that is, what do you think are the problems with the current law and its administration?

Ms. LANDMAN. The problems in part are covered by the GAO report which you just alluded to, that have to do with keeping the criteria up to date; but going beyond that, there is the scope of criteria. There are numerous substances of concern for which no EPA criteria documents have been written to date. In particular, we have major gaps in the area of items that affect water quality, such as sediment contamination. We need sediment quality criteria very badly. We need criteria that address the problems of biological integrity of waterways, and we need criteria that address wildlife and the impacts of water pollution on wildlife.

These are all areas where EPA has been limping toward the development of some national criteria documents for a very long time, and we need some kind of a resource commitment on the part of EPA and on the part of the Congress, and we also need an additional political commitment, I think, within the agency to address those gaps.

In addition, water quality criteria documents originate with EPA, but then form the basis for State adoption of water quality standards. The process of converting those EPA criteria into meaningful State standards has been extraordinarily slow and cumbersome. In 1987 the Congress mandated that States, within the next triennium—that is, by 1990—adopt for themselves water quality standards based upon the EPA criteria documents that did exist for toxic substances.

The process was—I should say the three-year time table was not followed by a large number of States. Ultimately, EPA was compelled, in part, I think, through litigation brought by NRDC, to step in and promulgate standards for a dozen States that even four and a half or five years after enactment of the 1987 amendment still had failed to act.

The committee's bill takes a number of very important steps to fill in these gaps and deficiencies. Notably, it does commit the agency to a planning process that will result in the development of additional criteria, and second, and very importantly, it speeds up the process by which those criteria are translated into meaningful standards at the State level.

There are a couple of areas in which we feel that additional changes are needed to make sure that these gaps are filled in an appropriate fashion. First of all, there are specific substances that we think ought to be listed in the bill for which standards ought to be mandated to be developed by the agency and then translated into something important at the State level in terms of State standards. Second, we are concerned about an open-ended planning process, because we had, unfortunately, some negative experiences in that regard with respect to effluent guidelines in the last ground of the Clean Water Act reauthorization.

So what we would recommend would be that the legislation not simply commit EPA to the development of a plan, but that it be more specific with respect to how long that list of substances ought to be that ought to be addressed and that sort of thing. In other words, broad discretion for the agency, but with a bit more direction from the Congress as to how that discretion ought to be exercised.

Senator GRAHAM. Mr. Silliman, what are your comments as to problems with the current law and its implementation?

Mr. SILLIMAN. Thank you. I think, number one, existing programs—this has been stated—were essentially authorized by EPA in 1987 to address these persistent toxics. If we compare this to the effluent guidelines, in operation for over 20 years, we see significant improvements in the quality of our Nation's waterways because of the effluent guidelines. We have not really yet seen the impact of these toxics showing up in permit limits yet, because they are only just now getting into the permit renewals.

A very specific concern that I have, representing the textile industry, has to do with the water quality criteria for metals. When I bring up metals, I want to assure you this is a broader issue than just the textile industry. We're talking about the mining industry, we're talking about the computer industry, electronics, we're talking about dentist offices, we're talking about photo finishers.

The problem that I have with the water quality criteria for metals is that these were based on laboratory science where we used relatively pure water and the most toxic form of the metal and the most sensitive species and used this to establish the criteria. There's no consideration of what exact form this metal would really have in the environment.

In the textile area, very specifically our concern is that some of our dye stuffs have a metal which is part—it's incorporated into a much bigger molecule that we use to color fabric, and it is very clear that these materials are not toxic, and that can be demonstrated. But because of the way the regulations have come through, our permit limits are established based on these very toxic form of metals which were used to drive the criteria.

This is not a cheap problem. I'm talking per facility \$1 million of capital investment and probably an additional cost of \$500,000, and

none of this is for any demonstrated environmental improvement. I certainly question its impact on the competitiveness of our industry, which is faced with significant imports.

This past year in January—and I commend EPA, because they recognize that there are problems with the current criteria—they pulled together from the leading scientists, both from their laboratories as well as academic institutions, to spend four days talking about this issue in Annapolis, Maryland. I wouldn't propose to try to summarize four days of very highly technical discussion, but two key conclusions that came out of this were, number one, that EPA needs to focus on the bioavailable form of a metal. That is a form of the metal that can interact with an aquatic species in some way as to cause harm, which we would interpret as toxicity. The second was that the textile dyes that contain metals clearly were of a very different chemical nature and were never intended to be covered by these criteria.

If I made some specific recommendations for the current bill, I'd say, number one, let's make sure we have good science behind these criteria. When you simply mandate a schedule, and a tight schedule, and there's not funding there to do the proper research, inherently the agency has to make very conservative assumptions. Those conservative assumptions, when they get implemented, can be extremely costly.

The second one is to focus on the bioavailable toxics. Let's deal with the big problems first, and let's get those behind us. We do not have infinite resources to address every problem, to address every material that we can detect analytically.

Last, I would propose that we mandate an advance notice of proposed rulemaking and guidance. The problem is that when guidance is put out there, it's simply guidance from EPA. When it gets to the State level, it's implemented as regulation. There has been no opportunity for good public input into the development of that guidance, and that would be the purpose of that—let the affected parties come to the table and have their input and allow public comment before that guidance goes out.

In summary, my recommendations are good science, focus on bioavailable toxics, and advance notice of proposed rulemaking. Thank you.

Senator GRAHAM. Thank you very much.

Ms. Prothro, Mr. Baker, would you like to comment on that diagnosis of the current problems?

Mr. BAKER. Let me go first. There's probably no group that has struggled more with this issue of water quality standards than the States. We're the people that have to take those national guidelines and translate them into standards and then into permits, and then we have to enforce them. The problems that are now being identified with the criteria are not new to the States. We've been making a lot of noise over time about the need to have better criteria. It's one of the—probably the main reason why water quality standards are not being adopted as quickly at the State level as they need to be.

Your idea in the legislation of a plan for the development of criteria we think is an excellent idea. I also think that there needs to be some emphasis on the resources at EPA to make sure that plan-

ning gets carried out, and also some mandate to make sure that what's in the plan gets done in a timely fashion. It's not going to help to have plan that does not get implemented that provides us with the relief that we need in the criteria.

Another area that has come up and you're trying to deal with is the speeding up of the process. We're very concerned about the presumptive applicability once the criteria is issued. We think there's a great benefit to the State adopting water quality standards. That's where we get into all the issues of due process, the education of the public and understanding of the review of the science, the translating it so that it makes sense. I mean, the standards for Florida have to be different than the standards for Wisconsin. Trying to address those things at a national scale is nearly impossible. We do need to have that translation to the local geographic situation. It has to occur.

Now, if you go ahead with the presumptive applicability, which we hope you don't, I would make some suggestions that it only apply to new standards and not to the revision of existing standards. In many cases, States have already adopted a lot of these standards, and if there's a revision that gets issued on a criteria, the concern that we would have is that you may have States that have more stringent standards that are operating effectively with that standard, and with this presumptive applicability, you may see some backsliding on standards that may be difficult for a State to prevent. It will be very hard to argue continuation of a more stringent standard when suddenly something comes out and it's enforceable at a national level.

Also, we would urge a very formal role in the development of the criteria. One of the things that frustrates us is we have to implement these things, we know the problems with these criteria, and yet it's very difficult for us to play a direct role in the development of the criteria. We have good scientists at the State level that can provide meaningful input. We know the problems of implementation of some of these numbers. The metals issue is an old, old issue to us that we're all trying to struggle with, and yet we're not directly plugged into the process. If we could have a direct formal role of the States in the criteria development and in the preparation of the plan for criteria, I think you would have a lot more comfort with States in terms of the process.

Finally, a major issue for us is focusing also on implementation issues, like mixing zones. Mixing zones has been highlighted in the bill as a critical issue for translating a criterion into a permit limit. There are many other issues like that. For example, flows. What type of flows do you use to calculate effluent limits? If we're going to have national consistency, if we're going to have meaningful water quality standards, we need to have, at the same time a criterion is developed, the translation criteria or guidance with that. Unless you have that, you could adopt the same number and apply it to every State, but because each State has its own translation mechanisms, you'll have 50 different results and permits. So it's a two-part process that needs to be looked at.

In our written testimony, which I won't go through, I listed some other areas where we think there can be some strengthening. I don't know that we need to have major changes in this part of the

act to get some of these things done, but certainly the effort to strengthen the criteria development is a very important one.

Thank you.

Senator GRAHAM. Ms. Prothro, in addition to responding to what has been said, I'd be interested in your comments on the GAO report. Do you believe that it accurately reflects the current state of this part of the program?

Ms. PROTHRO. Well, let me take that first. I believe that the document I've seen, at any rate, is a preliminary summary of where GAO is in doing a study, which they have not yet completed. I hope that we're going to be working with them more on this. They seem quite focused on the need to update the priority pollutant list. It's certainly true we have not been updating the priority pollutant list. The main reason is that it doesn't have much significance in terms of the law or our regulations at this point. We do have flexibility to go beyond the priority pollutant list in our regulations. We often do. We're not restricted.

Now, I'm very interested in some of the comments that GAO has made indicating that perhaps, out in the field, folks are more focused on the priority pollutant list than we are here in Washington at EPA. We'd like to learn more about that. If that's true, then I do have a concern about the need to update the list. But I think that's something we need to work with them on and understand a little better.

We are in fact updating our methodologies. It's taking a while to do that. We're consulting widely with scientists around the country. Our own science advisory board is helping us with that, and we will be revising our methodologies both for human health criteria and for aquatic life criteria in the near future. Then we'll have to revise the existing criteria to reflect that. I think we've learned a lot in the last few years about bioaccumulation and some of the other subjects that we've talked about here today that do need to be reflected in the criteria.

We fully support the plan concept that's in the bill. We think that's a good one, and we certainly support the notion that it would be done in a very public forum and that we'd get input from a lot of different parties. I think we've made a lot of effort to bring the States and others into our planning process now, especially in the last couple of years. If we can improve that process, we want to do so. We need the input of all parties.

A lot of the feedback that we get nowadays as we go around and talk to States and others about water quality problems is that we need to focus more on conventional pollutants, on biological resources, on ecological risks, and not just on specific chemicals, that we need to look more holistically at the water quality problems and use the criteria and standards program to protect those values and not just chemical purity of the water. So we're trying to move in that direction.

This is a real challenge for our criteria program. This is also expensive. It competes with a lot of other work, and yet we think it's very necessary, particularly as we identify non-point sources more and more as a matter of concern. The bill does direct us to focus on some of the non-point source pollutants, and that, we think, is appropriate.

With regard to the presumptive applicability for the numeric criteria, when we put them out, I think the bill has a very reasonable approach to it; the bill gives States an opportunity to go with their own approach, but provides that if they don't adopt their own approvable approach within a given period of time, then the Federal criteria would be applicable in that State. I think this is very important to us. We've devoted a lot of our resources and a lot of our energy in the last few years to establish criteria in those States that have not adopted their standards in a timely way.

States had almost 10 years to adopt numeric toxic criteria. Very few of them had done that until EPA threatened to promulgate for them. By the time many of these standards got in place, there were accusations that the criteria were out of date. There were problems in legislatures that delayed adoption in particular States. I think some kind of a Federal backstop here is necessary not only to keep the process moving, but also to allow us to use our resources to work on criteria instead of to promulgate for the States on a State-by-State basis, as we had to do this last time.

So we support that provision very much. We also support having public comment in our criteria development process on individual criteria. In fact, we do issue our criteria for public comment now. We are usually disappointed that we don't get more feedback in that process. Perhaps there's more we could do to bring the States and others into that process. We're certainly open on ideas on how to improve that.

Senator GRAHAM. Any other comments on this subject?

Ms. LANDMAN. I'm going to have to make one brief comment with respect to the mixing zone provision that's contained in the bill. The mixing zone concept is really a concept that says that a pollutant is not harmful if it's diluted with the water that's in the stream or in the lake or in the estuary. This is the concept that is inimical to the underlying thesis of the Clean Water Act, which is that dilution is not a solution to pollution.

It is true that States utilize the mixing zone concept now to allow the discharge of substances into their waters. It's a concept that we have a lot of problems with, and we can't support including in the legislation a provision that essentially gives a Congressional imprimatur to this idea, particularly with respect to toxic pollutants. If the provision were limited to conventional pollutants that don't have persistent or potentially bioaccumulative effects on waterways, perhaps there's room for discussion, but with respect to toxic pollutants, mixing zones are not acceptable.

Mr. SILLIMAN. Could I also comment on that? I think that the mixing zone has been an integral part of the implementation of the water quality standards, and I think it needs to continue, because we've made several comments here. Yes, there may be some toxicity. A lot of things can be toxic at some level, and we're looking not at what is happening right where the pipe goes in, but when it's mixed with a river, and that's the whole purpose of a mixing zone.

Second, there was some presumption that the toxicity as such is also related to bioaccumulation, and that's not necessarily true, and that certainly was not the basis, for example, of what underlies the water quality standards for metals.

Senator GRAHAM. Thank you very much.

Senator GRAHAM. Our next panel is going to focus on contaminated sediment. Ms. Beth Millemann of the Coastal Alliance; Mr. Frank Hackmann of the U.S. Chamber of Commerce; Dr. Morgan Rees, Deputy Assistant Secretary for Planning Policy and Legislation of the Office of the Assistant Secretary of the Army for Civil Works; and Ms. Prothro will be our participants in this next panel.

I understand that Ms. Millemann could not participate. Mr. Brett Hulseley is substituting for Ms. Millemann.

We have already touched upon the issue of contaminated sediment in our previous discussion. We know that there are great health risks from this contamination and that they involve pollutants that have entered the water decades earlier, settled into sediment, and are now being released back into the water. Some of those pollutants enter the water from discharges, some from other sources, such as air. We are told that EPA has had the authority for years to set water quality standards for sediment contamination but has never exercised that authority. This bill gives EPA clear authority to do so and starts them out by requiring EPA to develop not fewer than eight criteria sediment contaminations within four years.

Mr. Hulseley, I'd like to ask if you could give us your diagnosis as to what you think the problem is in terms of the way in which the current law has affected contaminated sediments.

Mr. HULSEY. Thank you, Senator, and thank you for addressing contaminated sediments. It's one of the most difficult issues in the clean water arena and in the Great Lakes.

My name is Brett Hulseley. I'm the Great Lakes Program Director for the Sierra Club, and contaminated sediments or cleaning up those sediments is our highest priority. We appreciate your leadership in the bill in dealing with these sediments and setting deadlines for sediment quality criteria for eight chemicals.

As we've heard here today, PCBs and dioxins are a major problem throughout the Nation, in the New York/New Jersey Harbor and many others, and as you can see from the map up here, virtually every harbor in the Great Lakes has contaminated sediment problems. Many of these harbors are clogged, and if you will flip to the next chart, we recently released a study trying to analyze some of the jobs at risk in the Great Lakes based on these contaminated sediment problems. The top threat in the study "Clean Lakes, Clean Jobs" was to the tourism area, which is one of the top economies in the Great Lakes. We estimated that there were \$69 billion at risk and almost three million jobs. Those are direct jobs. We didn't calculate indirect jobs.

Looking at other industries, in both the commercial and sports fishing industries, we estimated a \$4 billion industry with 89,000 jobs at risk. In the shipping industry—a speaker earlier spoke of competitiveness. Half of the U.S. steel is produced in the Great Lakes basin. Many of these harbors are so clogged that steel companies are losing millions of dollars a year because they cannot fully load their ore boats, bring them into Indiana Harbor and others. We calculated the risk there to be about \$3.5 billion and about 44,000 jobs.

This is a first attempt to understand what the total impacts of contaminated sediments are in the Great Lakes. We feel if we were

to extrapolate this to the other three coasts, simply multiplying these numbers by three—very simple mathematics—that we might be looking at somewhere over 10 million jobs and almost \$400 billion in jobs at risk throughout the Nation. That's a calculation we need to do. We haven't done it yet, but that's just sort of a quick sketch.

So we feel contaminated sediments are the biggest problem. We also tried to calculate some health costs, assuming between 10 and 20 percent of people drinking Great Lakes water might be subject—their health bill might be related to contamination. EPA has estimated that over 38,000 lifetime cancers are caused, for instance, from people eating Great Lakes fish, and this is an estimate we find that is cause for concern and cause for clean-up.

The study alluded to earlier by Mr. Baker dealt with the fact that children of mothers who eat Great Lakes fish tend to be born prematurely, they tend to have higher health costs when they are born, and after four years they tend to have lost memory and may lose up to five IQ points because of the PCBs that their mothers ingested before they were born. In fact, seeing the videos of some of these kids, many of them were unable to take the tests because they could not sit down and concentrate long enough at four years old to take these tests. I say that these kids make Bart Simpson look like a rocket scientist as to their inability to just sit down and concentrate.

So this is what we feel is the risk. This is a problem in every major harbor in the United States. There's current litigation in the New York/New Jersey Harbor. Several years ago, former Congressman Lehman from Florida testified to the problems they were having in the Miami River and the Miami Harbor on this as well.

I think the bill you have before you takes some really good first steps in dealing with it, especially in giving us standards for PCBs and dioxins, which we think are two of the worst problems. We'd also like to see standards for some heavy metals—mercury, lead, cadmium, and several others. We also need a national program to deal with this problem. EPA has been struggling under short staff to get five draft criteria out, which will hopefully be out this summer, but we need this to be a major focus of this Clean Water Act, and I think this is a great step we can take in moving forward.

We have been leaders in this in the Great Lakes. We've actually cleaned up one harbor, the most contaminated harbor in the Great Lakes that had PCBs of 500,000 parts per million, Waukegan Harbor, but unfortunately most of the clean-ups are proceeding right now under Superfund consent decrees and are very slow. There have been a lot of things said about the Superfund Program, but it's currently the best tool we have for cleaning up toxic harbors.

We'd like to take a look at the EPA and Corps relationship on ocean dumping as well. That's been a huge issue for us, and I assume folks from the Corps will talk about that later.

We'd also like to support the Metzenbaum-Glenn clean water reauthorization bill. They will take sort of our pilot programs that we've developed in the Great Lakes to clean up these harbors and move that the next step forward to full-scale clean-ups so that we can start creating some models and giving people in the Great

Lakes some hope that our fish are going to be safe to eat, our water is going to be safe to drink, and our Great Lakes are going to be cleaned up in our lifetime.

Thank you very much.

Senator GRAHAM. Thank you, Mr. Hulse.

Mr. Hackmann, from the perspective of the U.S. Chamber of Commerce, what is your assessment of the current state of contaminated sediment law and its implementation?

Mr. HACKMANN. Well, I think it's true that there are areas of the country that have contaminated sediment that is a real problem, but I don't think, from our perspective, that the solution to that problem is another national command-and-control, prescriptive kind of approach. I think that the localized areas of sediment contamination can be dealt with under current authority, certainly on a first-step kind of a basis, and I do not see the need for another whole program on top of all the other programs that are already there.

Two of the chemicals mentioned, one has been banned for over 20 years and the other has never, to my knowledge, been intentionally manufactured in the United States by anybody—that being PCBs and dioxin. So I just don't think that the problem lends itself to the kind of solution that's envisioned.

I also think there's a real danger, if you do too much aggressive movement in a harbor, of making things worse, not better. I don't think you necessarily make things better if you disturb the sediment.

Senator GRAHAM. Ms. Prothro, it's been stated that EPA has had the authority, but it has not been exercised. Does EPA agree that it has the capacity to deal with this issue and has failed to do so, and if so, why?

Ms. PROTHRO. We think we do have the authority under current law to promulgate criteria for sediment quality. We have not done so as yet, but we have been working for the last several years to develop a methodology and specific criteria. We are hopeful that we'll be able to establish those even without specific authorization in the law, but we would welcome both a clarification and support specifically from Congress on our moving forward on sediment criteria. We will be moving forward on that in any event, however.

Sediment contamination really is a case of the sins of the father being visited on his sons and daughters, I suppose. It's really one where we're facing tremendous costs in "in situ" contamination that may not be readily remediated. Although we have some authority under the recent Water Resources Development Act amendments, which will help us by authorizing some inventories to be developed and some other work in the sediments area, I'm not sure that we've been able to identify any legislative solutions to this problem. I think there are many, many practical problems that we still have to work on that are going to take a long time to solve.

One suggestion we would have for perhaps an addition to the bill would be some specific authorization for EPA to help States address the health risks of fish contamination associated with sediment contamination. EPA could do this by establishing some basic guidelines as to how fish consumption advisories should be developed and communicated. It's unfortunate that we would be in a po-

sition where we have to warn people about health risks rather than simply solving those health risks, but in reality I think we have to face up to the fact that it's going to be many years, perhaps lifetimes, before we can actually solve this problem in many of our waterways.

We certainly would be happy to work with the subcommittee on other ideas that might be suggested by others as to how we could improve our authority in this area.

Senator GRAHAM. Dr. Rees, it's been suggested that one of the problems here is that solving the issue of contaminated sediment may itself create additional problems in disturbing the water column. What is the experience of the Corps of Engineers in terms of technological options in terms of how to deal with this problem?

Dr. REES. During the past 20 years or so since the original passage of the Clean Water Act, the Corps of Engineers has spent over \$100 million on researching questions like this on what the impacts are of dredging and disposal of dredge material. There are occasions where disturbing the material causes resuspension, and we've studied those and we've dealt with those in many instances. By and large, we find those effects to be very temporary and transient, just during the dredging episode. We have tested the circumstances by comparison with the surrounding water and find that the effects are physically limited to the dredge site and don't last very long.

There are a lot of other problems, though, that continue to be addressed. Focusing on just one aspect of the dredging or disposal option, we believe, is not good science. We support very, very strongly, and frankly have since 1972, a cross-media approach to the analysis of the effects of dredging and disposal. You can't simply look at what happens in the water without also having to consider what happens in other alternatives in the way any particular project is carried out.

We note with great interest and support the discussion in the proposed legislation that deals with cross-media evaluations and to find out what really, in a broader environmental context, is the best course of action.

Senator GRAHAM. At an operational level, there's been some concern by the Corps of Engineers when it is engaged in a maintenance project, such as a standard harbor maintenance of depth of channel project, as to whether it has the authority to extend that to also include the elimination of contaminated sediments within that harbor. Could you talk some about how the Corps has seen its authority, both legal and financial, to engage in these sediment removal projects?

Dr. REES. The Water Resources Development Act of 1990 (WRDA 90) provided the authority that you're referring to, and in fact that authority was originally provided in the 1972 Clean Water Act to the Environmental Protection Agency, not to the Army Civil Works Program. The WRDA 90 authority is a duplicate of authority that EPA has had for 21 years. We have had it for three years. There has not been any funding for that program in either agency, certainly not in the Army and, to the best of my knowledge, not in EPA, either.

Let me add a point there. We have provided guidance to the field offices of the Corps that where contaminated sediments exist out-

side the navigation channels, the Corps should proceed with removal if they can show that there is a relationship to that removal with the interests of navigation. The basis for this position is that the funding for the dredging program comes from the Harbor Maintenance Trust Fund, and that's all contributed by the maritime interests. So where we can show a relationship between the objectives of the work and the source of the money for the program, we've told the Corps field offices that they should proceed.

Senator GRAHAM. Are there any other comments on this issue?

Mr. HULSEY. A couple of comments, just to respond to Mr. Hackmann's comments about PCB and dioxin. As Mr. Baker pointed out before, current NPDES discharges in the Great Lakes are releasing about 290 pounds of new PCBs into the lake every year. A quick calculation shows that that's enough to contaminate 195 million pounds of fish at the action limit of two parts per million. So in addition to controlling new sources, we have to eliminate current sources.

Right now many dredge projects that the Corps is supposed to be involved in the Great Lakes and the New York/New Jersey Harbor and others cannot proceed because of either legal entanglements over the contaminated sediments issue or just an inability to deal with the toxic pollution. So that's why we want to work out a clear, practical national program to help deal with these issues and give us something that the courts can work with, the environmental community can work with, and provide us a degree of scientific certainty in the States with these clean-up plans.

Senator GRAHAM. What is the nature of the legal impediments to your carrying out a removal of contaminated sediments?

Dr. REES. Without knowing a specific case, it's hard to say. As we get into each case, we find that there are very many factors that are different, and we really don't have any broad precedent that we can follow in how to deal with these cases. I guess the bottom line legally for clean-up of material is there's no question that EPA and Army both have the authority to do that. The question is, what do you do with the material once you dig it up? Where do you put it, and what are the legal implications of getting rid of it? And we can't really tell that until we get into the individual case and see what the area is surrounding the dredging site.

For example, New York City has been mentioned, and there is a pending lawsuit there, so we need to be careful about how we discuss that. But it's clear from the record that for many, many years the Corps, the EPA, and others have spent a lot of time and a lot of money searching for practicable alternatives to the disposal options there, and no matter which alternative is selected or which alternative is analyzed, we find that there are serious legal impediments for implementing each one.

This, again, gets back to the cross-media analysis that we believe is critical to the success is solving this problem one way or another, because if you say, "Well, you can't put it in the water," well, then, you start to look upland, but all the land regulations say, "Well, you can't put it upland," and the air regulations say, "Well, you can't burn it," and it's a vicious circle that we've been chasing around for many years trying to find some way out of it.

I'd like to follow up on a comment Mr. Hulseby made here, if I may, that I think relates to this question. There have been some serious problems in the Great Lakes with disposal of dredge material, and there's no question about it. In 1970 an act was passed that allowed the Corps of Engineers to build confined disposal facilities to contain all the contaminated dredge material. The authority under that act has lapsed, but the notion was that the authority would extend for a period of 10 years, during which time the quality of the sediments would be improved through water quality management practices. Well, that didn't happen, and we find that the sediments are still polluted.

The bottom line of all that is that the maritime interests are faced with the problem of dealing with the pollutants that are, by and large, caused by other people, and the other people just walk away from the problem, and the maritime interests are left with dealing with that problem. This was a real difficult problem to handle. I think we have begun to make some progress. In fact, we're quite optimistic.

We've developed a relationship with the State of Ohio, the Port of Toledo, the Environmental Protection Agency, and the Corps, and we've been working for several years now on a much broader problem-solving approach and not just looking at handling the dredge material. We're looking at what the objectives of the water quality standards are and how the navigation interests fit into that. We're looking at where the sources of the different pollutants are and what the State and Federal agencies are doing about managing those sources, and we're very optimistic that that's going to lead us somewhere in the future—not in the next year or two, but maybe 5 or 10 years down the road—to seriously reducing the problem that we face today, and I hope I'm right. We're optimistic, and we're going to continue on that.

Mr. HULSEY. The Metzenbaum bill would continue the funding for that relationship between the Corps and the EPA and citizen groups, and we support that as well.

Senator GRAHAM. Any other comments on this subject?

[No response.]

Senator GRAHAM. If not, thank you very much.

Senator GRAHAM. Next we are going to discuss anti-degradation policy. Mr. Hackmann is going to continue to join us, representing the U.S. Chamber; Ms. Prothro; and then we'll be joined again by Ms. Jessica Landman of the National Resources Defense Council.

The anti-degradation provisions of the Clean Water Act are designed to keep clean waters clean—that is, to resist the temptation to allow pollution of clean or pristine waters down to water quality standards applicable to less pristine waters. We've heard that many States have not implemented this policy. The bill directs the States to do so. The bill also declares certain waters, including those to be outstanding national resource waters, which cannot be degraded under the Clean Water Act.

In our earlier discussion on pollution prevention, it was stated that there were some inhibitants to effective pollution prevention, and one of those was the anti-degradation provision in the Clean Water Act. I wonder if anyone would care to comment as to the

degree to which this provision constitutes a barrier to pollution prevention on a voluntary basis by industry.

Mr. HACKMANN. I'll go first, if nobody else wants to volunteer. Senator GRAHAM. Mr. Hackmann?

Mr. HACKMANN. From industry's perspective, I think the reason it's a barrier is this: Oftentimes in pollution prevention, you are substituting a material. In other words, you're reducing one thing, but maybe you're putting in something else. If that something else wasn't in your permit previously because you didn't use it, and now you have to modify your permit to discharge it, even though clearly the overall environment and the cross-media impacts and everything are clearly better off, on a strictly speaking parametric analysis, more of this chemical is going to be coming out, and read in its most literal and negative kind of way, if that increases your baseline concentration, that can be viewed as degradation of the water quality, and you don't in effect get a credit for reducing the other thing that you reduced. I think in a capsule form, that's our concern.

Senator GRAHAM. Ms. Landman?

Ms. LANDMAN. I'd be happy to try and respond to that. In a certain sense, it can be said that protection of outstanding national resource waters, which is one of the components of the legislation that we do strongly support, would prevent someone from taking an action that would degrade those outstanding waters, and there can be circumstances in which a prohibition on any discharge is appropriate. Now, for an existing facility to be discharging to an outstanding national resource water and have that problem arise, that's a little bit difficult for me to conceive of, because by definition those waters are essentially pristine, and no existing factory is going to have a problem wanting to increase its discharge.

With respect to existing facilities that would like to experiment with pollution prevention, the anti-degradation regulations that EPA now has don't say, "Never, no, no, will you be allowed to increase the discharge of a substance." What they do say is that if you can make a very strong case that the degradation of that water is necessary to allow economic and social development in the area where those waters are located and you can show that you're doing everything else that you need to do to comply with the Clean Water Act regulations and so forth, then you can make a case for an increase up to the point where water quality standards might be violated.

So I believe that the anti-degradation provisions of the regulations do establish appropriate limitations on the types of degradation that can occur, but also have adequate flexibility to allow true pollution prevention efforts to go forward if the case can be made.

One of the big problems that we do face in implementing anti-degradation, though, is that there is no explicit discussion of the issue of anti-degradation in the existing Clean Water Act. Although it is mentioned—a mention of the concept was added in 1987—there is no clear mandate in existing law that tells EPA that this is an important responsibility, to carry it out, and to help the States carry it out. That is one of the reasons that we welcome the addition that S. 1114 would have with respect to anti-degradation

and with respect to addressing the issue of outstanding waters and their need for protection.

Senator GRAHAM. Ms. Prothro?

Ms. PROTHRO. Senator Graham, I've been joined by Bill Diamond from our Water Office of Science and Technology. I'd like to ask him to comment on this issue.

Mr. DIAMOND. In response to your question about whether or not we think anti-degradation is a barrier to pollution prevention or experimentation with new chemicals, we think that the existing process examines whether or not there is a potential degradation. But, as Ms. Landman pointed out, we don't think it's a ban or a mandate that would prevent experimentation with new chemicals. There are mechanisms under the current law and regulations that allow us to look at those new additions to determine if there is degradation; if there is degradation, then there is a review process on whether or not it should be allowable. But it's not a ban in and of itself.

Senator GRAHAM. One of the reasons for the language that's in this bill is the allegation that many States have not implemented the national policy relative to anti-degradation. What has caused the States to be reticent to implement this policy, and do you think their reasons have been sufficient? And if not, do you believe that this legislation would be a sufficient remedy?

Mr. DIAMOND. There's a number of reasons why anti-degradation hasn't been utilized as much as it can be to maintain the goals of the act. One of them is just the historical focus of the program. The focus of the program recently has been on the adoption of water quality standards for toxics. As we get into the implementation phase of that, we expect that there will be more anti-degradation issues coming to the fore.

An example of that is the regulation that the agency recently proposed for the Great Lakes Initiative. Anti-degradation is one of the central features there and is getting a lot of discussion and debate. We think anti-degradation can be utilized more, and we think there has to be more cooperation with the States to achieve them.

One of the areas that the bill does address that States, I think, have underutilized is the designation of outstanding national resource waters, or ONRWs. There have been some designations by States. It hasn't been as widespread as maybe some would like. One of the problems there is the prescriptive nature of ONRW requirements. Once you have an ONRW, there can be no new or increased discharges at all. That means a fairly rigid locking away of those water bodies. Some of the States want to grant additional protection, but are unwilling to put them away permanently, so to speak. I think they've been creative in trying to come up with solutions that provide additional protection, and we're trying to work with them in our regulations to make those more workable.

Ms. LANDMAN. One key reason why States have hesitated to step to the fore in this area, I believe, is that they have felt a need for clear direction from the national level. At different points along the way in the past five to seven years, EPA regional offices and EPA headquarters have begun the process of developing national guidance on how you go about implementing an anti-degradation program. That guidance has never quite blossomed into a full na-

tional guidance on the part of EPA, and we think that kind of leadership from Washington, not dictating to the States exactly how to run their programs, but giving them clear guidance on what types of things they need to consider and that sort of thing, would be extremely helpful in moving this program along.

In particular, an area that needs clear Federal direction and guidance is how you go about implementing this very important concept for land uses and activities that disturb land, that cause polluted runoff problems. For the most part, to the extent anti-degradation has been implemented, it has been with a focus on discharge permittees. If somebody comes in and they say they want a new permit, that's the trigger for an anti-degradation review.

Since so much of our existing and threatened problems from water pollution have to do with land use activities, from agriculture to new developments of resorts and so forth, it's important that in protecting pristine waters we have clear guidance from EPA on how States and localities should think about preventing pollution from runoff sources as part of an anti-degradation effort.

Mr. HACKMANN. I think we come to this issue from a slightly different perspective. From our perspective, first of all, the anti-degradation concept basically sets a tighter water quality standard than the water quality standard that would otherwise apply. In basic terms, it says if the water is better than the water quality standard, you have a very high burden to overcome to allow that water quality to get, if you will, worse, even though it's still within the standard.

Speaking from the State perspective, although I don't currently work for State government, I think one of the reasons the States are reluctant to adopt rules is that they've learned, painfully in some cases, that if they adopt rules based on guidance, they may not be able to change those rules if EPA later changes its guidance. A number of States got tripped up on this in the Air Act, some in the Water Act, some in other areas, and I think that their reluctance is understandable until there's clear-cut guidance.

Finally, I think that these are areas better left to local decision makers about how they want to run their community and represent the values and the cultures and the local governments of those areas and shouldn't be mandated from Washington.

Senator GRAHAM. I want to come back a moment to the issue of the degree to which anti-degradation has been a barrier to voluntary pollution prevention. Since we've had some States that have adopted anti-degradation standards and others that have not, is there a difference in the degree to which companies have voluntarily engaged in pollution prevention practices as a function of whether they are in a State that has or has not adopted anti-degradation standards?

Ms. PROTHRO. Senator, I don't think we are aware of any evidence that is the case. In fact, I think you could just logically argue that an anti-degradation provision might encourage pollution prevention in order to allow for more development—in other words, the more a pollution is reduced through a prevention approach, the more likely it is that other development could be permitted under the anti-degradation rules. So I'm not sure I understand that.

I think perhaps that comment was going to the concerns that have been raised about a different provision of the act, which is anti-backsliding, which is a somewhat different provision that applies directly to effluent limits in a permit. There's been a lot of concern that maybe that provision was unduly restrictive and didn't allow any flexibility even when water quality wasn't threatened.

I think that EPA's interpretation of anti-backsliding is not well understood. We interpret it in such a way that it is not really creating that kind of a problem, but I have to admit we've been a little slow in getting that out, so that people can see it in their regulations and understand how it works. But that is a somewhat different provision of the act.

Senator GRAHAM. Are there any other comments on this issue?

[No response.]

Senator GRAHAM. If not, thank you very much.

Senator GRAHAM. We have two related subjects remaining: pretreatment and domestic sewage exclusion. Since those are closely related and there's an overlap of several of the participants, I'd like to ask if we could discuss those together. Ms. Landman will continue, Mr. Hackmann, Ms. Prothro, and Mr. James Batchelder, Vice President, Environmental Affairs and Technical Services, Koopers Industries, Pittsburgh, Pennsylvania, representing the American Wood Preservers Institute.

Senator GRAHAM. Again, I'd like to start with a question of what is the current problem with the pretreatment law. Under the current law, publicly owned treatment works, which are designed to treat conventional pollutants, nonetheless receive toxic pollutants that they, in some cases, state they are incapable of treating. As a result, many toxic substances are released into waters or the air or into sludge.

The bill attempts to address this problem in two ways. First, it provides that pretreatment standards for toxic pollutants must be equal to the standards for dischargers directly into water. The second allows permit officials to impose pretreatment requirements on industrial users, even if the source is not otherwise subject to a pretreatment program. Whether to strengthen pretreatment provisions of the act, there is concern that EPA has not provided adequate monitoring or enforcement of indirect discharges to publicly owned treatment works and that those works are not designed to treat some toxics that are being discharged into them.

I wonder if we could again get your assessment of what is the current problem as it relates to the pretreatment or lack of pretreatment of discharges before they are entered into a publicly owned treatment work.

Mr. Hackmann?

Mr. HACKMANN. From the perspective of the Chamber, I'd like to respond separately to the two key concepts you described—first, the concept of any discharge of the toxic material to the sewers should meet the same standard as if that discharge were discharged directly to a receiving water. We are totally opposed to that. We think it's bad policy not only for industry, but it would also be very bad policy for cities, for the people that run the treatment plants, because as a practical matter, if Congress would pass

a law like that and it would survive the challenges that would come to it, I think that the way companies would try to comply with that law would be to cease their discharge entirely to the sewer and that when they did, that would deprive the city of the revenue stream from running a sewer system.

And it proliferates treatment in very small, decentralized areas where then, because the second law of thermodynamics still applies that you have to take the stuff somewhere, you then have to take it somewhere else. So on that first point, we do not agree with that concept.

On the second point, we believe that the pretreatment program in the current law is a very comprehensive program, that there's ample authority for EPA and the States and the municipalities to deal with these issues, and at least based on my experience as a practitioner in the field, they're do so aggressively, setting pretreatment standards to protect pretreatment operators' health and safety, sewage sludge, and whatnot.

Senator GRAHAM. I wonder, Ms. Prothro, what is your comment on the statement that existing law gives to publicly owned pretreatment works sufficient authority to address the problem of necessary pretreatment?

Ms. PROTHRO. Well, I think current law is very good, but it could be strengthened in some ways. One of the things that we'd like to see is authority specifically for EPA, in those communities where we have responsibility for running the pretreatment program, to do what localities and States can do. That is, to issue permits, sometimes called control mechanisms, to individual facilities to make sure that they have effluent limits that are enforceable.

There are a number of other things that we'd like to see improved in the establishment of the categorical pretreatment standards. These are related somewhat to the effluent guidelines process, and there are a lot of things about the bill that I think will help us in that regard. For example, we've sometimes had to go through some complex and almost impossible analyses on pass-through and interference of pollutants that are going into the sewers before we can adequately regulate them. We think a better way would be to allow us to identify pollutants that biodegrade in the sewage treatment plant and perhaps adjust pretreatment standards for those, but, otherwise, to apply best available technology requirements across the board to industries discharging to sewers.

We think this is important to protect the infrastructure of the POTWs, to protect the quality of the sewage sludge, which is a reusable resource if the quality is maintained, as well as to protect water quality and worker health and safety.

So there are a number of improvements we think could be made in the program, and we're very proud, I have to say, of what we have been able to achieve in this program, because it is one that we have implemented on a shoestring over the years. I think an awful lot has been accomplished, and a lot of credit goes to the States and local governments that have helped us to implement this program, especially our local government partners, who often aren't recognized for the good work that they do in this regard.

Senator GRAHAM. Ms. Landman?

Ms. LANDMAN. I believe it was in your opening statement this morning, Senator, in which you noted that a significant percentage of toxic substances discharged to waters are actually discharged to sewage treatment plants, even more in fact than are currently discharged to waters. And the Toxic Release Inventory is especially deficient in telling us how many toxic substances are going to sewage treatment plants, because so many of those dischargers are too small to fall within the reporting requirements of the law.

So from the studies that EPA has done, the evidence is quite clear that probably the Release Inventory greatly underreports the quantity of those substances going to sewage treatment plants.

You also noted accurately that sewage treatment plants are designed to treat conventional pollutants, and every time that EPA has gone back to study how well sewage treatment plants can be counted upon to deal with the toxic substances that reach them from the industries as well as commercial and residential users of those facilities, they find very inconsistent levels of treatment, a great deal of variability in treatment with respect to those toxic substances, both among facilities and even within a given sewage treatment plant from day to day. So it's really not appropriate to rely on a sewage treatment plant to address toxic pollutants.

In addition, in many respects, the kind of so-called treatment that a sewage treatment plant is providing for a toxic substance really only moves it from one medium to another. Specifically, metals that go to a sewage treatment plant don't get degraded by the treatment process. Instead, they wind up as sludge contaminants. A lot of volatile organic compounds wind up as air pollutants through the very efficient air distribution mechanism that a sewage treatment plant's aeration basin provides. It's just a really efficient way to cause an air pollution problem and the illusion of treatment.

Therefore, we strongly support a focus on allowing the pretreatment standards to differ from standards that would apply to direct discharges only with respect to those substances that can be demonstrated to be in fact biodegraded at a sewage treatment plant. That is a very appropriate way to allow the sewage treatment plants to do the jobs that they are constructed to do, which is to treat conventional pollutants that may originate with industry, commercial, or residential users, and then to remove from them the responsibility for doing something that they really are not properly designed to do, and that is to deal with toxic pollution problems.

So we think that that's an important change in the law, and we support it.

Senator GRAHAM. Well, as I understand it, the current law is that if a local sewer plant is receiving this type of industrial discharge, they have the authority to go to the plant and set the standards that must be met before the plant can put its discharge into the city system. Is that correct?

Mr. HACKMANN. Yes.

Ms. LANDMAN. Yes.

Senator GRAHAM. That would seem to be—since the plant has a great interest in what they are required to process and, on a site-specific basis, have an understanding of what their technological

capabilities are, it would seem that system would be an adequate one in terms of allowing the local plant, based on its local conditions, to set standards for discharge. Why isn't that system working?

Ms. LANDMAN. I think that there are two principal reasons why we have problems with the pretreatment program even though that authority exists. First, and I don't mean to belittle the very good pretreatment programs that exist in some cities, but in a sense it is asking the fox to guard the chicken house. The principal constituency for a sewage treatment plant may be those big industrial dischargers in their community; the pretreatment program, asks the sewage treatment plant to slap the wrists of and put limitations on their best customers, and no product seller likes to be the one to tell their customer that they're wrong.

The General Accounting Office has studied the pretreatment program's enforcement component and has found this to be a significant reason why sewage treatment plants that are responsible for managing these programs are reluctant to take action when they have a problem. That's one reason.

The other reason, I think, is parallel to the one that Mr. Baker alluded to when he described why it's hard for State permit writers to deal with all the exigencies of permit writing with respect to direct dischargers. It's a very big job. Their job is made a lot easier if national standards are set by EPA that establish a really good floor for those dischargers so that they don't have to, on an individual facility basis, write the local limits that they would have to set if those standards weren't good at the national level.

Senator GRAHAM. Mr. Batchelder, do you have any comments on this?

Mr. BATCHELDER. I'm here mainly to address the domestic sewage exclusion, but my experience—we've recently gone into a number of POTWs, and my experience is that the permit requirements to gain access are very stringent, and all cases include treatment and almost all cases include secondary and tertiary treatment before they discharge. Therefore, they do not pose a threat and are amenable to further treatment at the POTW.

Ms. PROTHRO. Senator, if I may, I just wanted to make the comment that even EPA has trouble technically doing the pass-through and interference analysis that is required. It's very difficult sometimes with the dilution in sewage sludges and effluents to identify exactly what's happening.

I just want to reinforce what Ms. Landman said about the real challenge that this presents to local communities that would have to base their limits on this kind of analysis when, even with our extensive technical resources, we still have difficulty doing it. So I think the localities do rely on our national standards. In fact, they've sued us in the past to require us to promulgate more national standards to help them to protect their sewage treatment plants, and that's one of the reasons that we do support this approach.

Senator GRAHAM. The second topic, which is really a subset of the pretreatment issue, is the question of domestic sewage exclusion. The bill attempts to close what some have seen as an omission in the current law by providing that the domestic sewage exclusion

only applies where the pollutant is covered by a pretreatment standard that is promulgated or is scheduled to be promulgated within eight years or is covered by a local limit. That is, a hazardous waste substance would not get the benefit of the exclusion from RCRA unless it was a substance that is covered by a current or soon-to-be-promulgated pretreatment standard.

Mr. Batchelder, what is your assessment of how the current domestic sewage exclusion provision is operating?

Mr. BATCHELDER. The current domestic sewage exclusion works well and gives us or someone with a listed waste water access to the POTW, which is very critical to our industry, and the proposed language would basically cut us off from access and the use of the DSE because of the prohibition for discharging hazardous waste constituents, which we were recently in 1990 listed as hazardous, our waste waters.

I do not see the domestic sewage exclusion as a loophole or unprotective. When we get access, we have to have permits. My experience has been, because we've just done this in the last couple of years, we have had to build substantial pretreatment facilities in order to gain access. There are strict limits imposed upon us, and they're monitored prior to discharge. They're biotreated down, and I would submit that the system is protective and that there is further treatment at the POTW and monitoring, and it serves as a back-up system, since you get two shots at these materials.

We're largely in rural communities. There is an economic benefit to that POTW, and I think our withdrawal or exclusion would be damaging in these small communities.

Senator GRAHAM. As I understand it, the problem has been stated that not all hazardous substances that are able to take advantage of the domestic sewage exclusion are currently covered by pretreatment requirements under the Clean Water Act, and that results in the local treatment plant which receives these hazardous wastes as having to assume the full burden of treatment. That does not sound the way—

Mr. BATCHELDER. I don't see it as the full burden of treatment. We accept the burden of treatment to the limits that they set, and they usually call in third party consultants to deal with their own system. In fact, sometimes we have sponsored and have paid for that in order to gain access. So I do not see that as factual. There may be instances, but in my experience that is not true. We go all the way—as I said, in some cases, we have actually treated down to tertiary treatment in meeting their discharge limits.

Senator GRAHAM. Ms. Landman?

Ms. LANDMAN. Senator, I think maybe there is a confusion as to exactly how your committee's legislation would in fact narrow the domestic sewage exclusion, because as I understand the bill, what it says is that if there is no pretreatment standard or no local limit, essentially a regulatory free ride, then the exclusion is eliminated, and that's entirely appropriate. But it also says that if the sewage treatment plant has established a local limit, then the exclusion would still be available, because that local limit would protect the sewage treatment plant and the workers who work there and the water body to which the sewage treatment plant discharges. That's my understanding of how the provision is crafted.

If that's the case, and if facilities that Mr. Batchelder is describing do in fact have such limits, my read would be that the exclusion would still be available. The problem is not facilities where somebody has thought through the potential hazard that would be posed by the substance being discharged to the sewage treatment plant. It's the ones where that exercise has not been undertaken and where no national pretreatment standard exists for the substance of concern.

Senator GRAHAM. I think Ms. Landman has accurately described what the proposed legislation would require—that is, in order to benefit by this exclusion, you would either have to meet one of two tests: either be covered by a local limit, or where there is a pretreatment standard that is either in effect or is scheduled to be in effect within eight years. Do you think those are reasonable—

Mr. BATCHELDER. I read a prohibition on discharge of hazardous waste, and there's a quirk in the regulation in our industry that our waste waters are listed as hazardous waste. So regardless of concentration, that's what I read, and if that's the fact, then that is a problem.

Senator GRAHAM. I do not believe that it's intended to set an outright prohibition, but rather to be a requirement that you have to meet one of these two tests—either have a pretreatment standard or covered by a local limit—in order to take advantage of the domestic sewage exclusion.

Ms. PROTHRO. Senator, we have some concerns about this provision, and I think the question you just raised about whether or not the prohibition on hazardous waste applies across the board is one of them. We'd like to look at that more carefully. Certainly, we would endorse the intent behind this, but I think the legal relationship between RCRA and the Clean Water Act is a very complex one.

I have to admit we're also concerned that when we're regulating on a risk basis, we don't particularly want to have industries coming in to us—and I don't think the cities do either—saying, "Please regulate us just so we can be excluded from RCRA." We'd like to be able to set our priorities in a way that's based more on an objective evaluation of what makes sense in terms of protecting water quality and protecting POTWs. So we'd like to work with you some more on this particular provision to address that.

A further refinement on Ms. Landman's description of the exclusion, though, I think would be that as I read the bill, we would have to include in a categorical standard or a local limit the exact pollutant, not merely provide that industry would be regulated in other words, the exact pollutant would have to have been regulated in order for the exclusion to be relieved. A lot of times when we look at industries and regulate them, we select pollutants for regulation based on the ones that we think are mostly of concern, and we may not list every single pollutant in a discharge, but we think we've nevertheless addressed the problems in that effluent. So that's another concern that we'd like to work with you on.

Mr. BATCHELDER. That's very, very important to us that, if that were to come to pass, because we do not have standards for zero discharge or direct discharge, going back to standards set in 1972, we would have no alternative. We've built plants, we're into the

POTWs, we're pre-treating, and as I read this now, we would be excluded. So we're talking about—I don't see any alternative, and, therefore, we're talking about jobs, a number of jobs in a number of small communities.

Senator GRAHAM. Well, I'm glad that we surfaced this maybe different perception of and interpretation of what the problem is and what the suggested solution is, and we will direct our attention to this.

I think it's interesting that we've concluded this hearing on this subject, which deals with the interrelationship of the Resource Conservation and Recovery Act and the Clean Water Act. It somewhat closes the circle, as we began with some discussions on pollution prevention and how that might relate to the Clean Water Act and particularly the Clean Air Act as alternative mediums of disposal.

I think one of the themes that has come throughout this series of very interesting insights into the Clean Water Act toxic provision is the interplay between the various environmental laws and the necessity of setting some standards and ways of looking at the relative benefits and potential public and environmental threats caused by these various toxic substances and their method of handling and disposal.

Again, I appreciate, to all of you who have participated in the hearing today, your very fine contribution to our understanding of these complex issues. We will be meeting Wednesday, July the 14th, and we will be discussing non-point pollution issues.

Thank you very much, and best wishes for the 4th of July.

[Whereupon, at 12:39 p.m., the subcommittee adjourned, to reconvene on Wednesday, July 14, 1993.]

[Statements submitted for the record follow:]

TESTIMONY OF MANIK ROY, POLLUTION PREVENTION SPECIALIST,
ENVIRONMENTAL DEFENSE FUND

Introduction

Chairman Graham and members of the Senate Subcommittee on Clean Water, Fisheries and Wildlife of the Senate Committee on Environment and Public Works. My name is Manik Roy, Ph.D. I am a Pollution Prevention Specialist with the Environmental Defense Fund in Washington, DC. The Environmental Defense Fund, a leading, national, New York-based nonprofit organization with over 200,000 members, links science, economics, and law to create innovative, economically viable solutions to today's environmental problems.

Thank you for the opportunity to testify on toxic pollution prevention¹ issues addressed in S. 1114, the Water Pollution Prevention and Control Act of 1993. The provisions of S. 1114 addressing pollution prevention are truly path breaking in building prevention into the core of one of our nation's most important environmental laws.

As this nation works to rebuild industrial competitiveness and to provide greater protection for our water resources and the overall environment, pollution prevention is the one policy necessary to achieve both goals. U.S. environmental laws have traditionally relied on "end of the pipe" technology to control toxic pollution. For the past twenty years, we have attempted to capture, control or contain pollutants after producing them.

But it is becoming increasingly clear—to the public, to industry, and to government—that front-end pollution prevention is the most cost-effective way to protect human health and the environment. This realization is reflected in the pollution prevention laws passed by the U.S. Congress and 49 states, and in public statements from all sectors of society (see Attachment A).

Nevertheless, we still have far to go before prevention is practiced as well as it is preached. No doubt some companies have taken important steps towards preventing pollution. However, this apparently remains the exception rather than the rule: the

1991 Toxics Release Inventory (TRI) showed that “[e]ven though emissions of chemicals are decreasing, we don’t see a similar downward trend in waste generation [prior to recycling, treatment, and disposal]. The data projected [by industry] for 1992 and 1993 suggest that generated waste will be flat or will even increase slightly.”²

While these industry projections show industry not yet embracing prevention, government attempts to promote prevention are still in their infancy as well. The U.S. Environmental Protection Agency (EPA) has certainly taken important steps to establish a framework for pollution prevention, but only a tiny fraction of the Agency’s budget is specifically linked to prevention—hardly a sign that prevention has entered the mainstream of EPA life.

A System that Puts Prevention First

Without a doubt, the end-of-pipe Best Available Technology (BAT) approach has been responsible for tremendous progress in protecting human health and the environment. No doubt the BAT approach will remain an essential component of our environmental protection strategy. But we approach the limit of what BAT can do alone. Putting prevention first will require a strategy with three important characteristics.

First, we must foster the use of site-specific pollution prevention technologies and practices that surpass Best Available Technology in protecting the environment.

The BAT approach bases standards on pollution control technologies (and sometimes pollution prevention technologies) that can be used by every company in an industry category. By definition, the BAT system can not account for pollution prevention practices that could be used only by a few of the companies in the industry category, even if those practices better protect human health and environment.

Because so many pollution prevention practices are site-specific, rather than universally applicable, we can not require their use through BAT-based rules and permits. EPA must use other tools to lead companies to investigate and choose for themselves the available prevention options.

Second, we must stop leading or allowing industry to play the “toxic shell game”—shifting pollutants from one environmental medium to another, or by pushing human health and environmental impacts to other parts of a product’s life cycle. When EPA sets standards for only one environmental medium it is allowing—and perhaps inadvertently promoting—the use of pollution control technologies that may merely shift the point of human health and environment harm, rather than reduce the harm, and all at great expense to industry. We must stop the toxic shell game.

Third, we must counteract the tendency to create an environmental compliance “priesthood” within industry, which blocks industry from distributing the responsibility for environmental protection to all employees.

Industry has responded to the environmental regulations by creating an environmental priesthood specializing in environmental requirements, learning the special languages and becoming attuned to the unpredictable events that characterize that any one firm’s regulatory environment. We can sympathize with industry’s desire to create environmental specialists and if we are content to allow companies to rest once they have met the minimum requirement—i.e. installing a universally applicable, end-of-pipe technology—then we can be satisfied with a system that creates such a priesthood.

However, companies are best able to prevent pollution only when they can engage top management, marketing staff, research and developing staff, production staff, and all others in the firm in environmental protection. Take, for example, the Federal Toxics Release Inventory³ (TRI), a community Right-to-Know program sometimes also known as the “CEO Right-to-know Program”. Requiring companies to publish information on their toxic releases broadened awareness of toxic chemicals to industry employees outside environmental departments, often resulting in dramatic voluntary reductions in those releases.

The pollution prevention-oriented provisions of S. 1114, specifically the sections on pollution prevention planning (section 205) and point source technology based controls (section 201), take important steps to build all three characteristics into our environmental protection system.

Pollution Prevention Planning

Because of the great diversity of industrial processes, EPA does not have the ability to dictate the exact pollution prevention strategy for each company through the BAT process. The responsibility for identifying those pollution prevention approaches which allow a company to surpass the minimum BAT standards must lie with

the company itself. A pollution prevention planning requirement, such as that in section 205, essentially formalizes this responsibility.

In developing a pollution prevention plan, a company should evaluate its pollution prevention options, leading it to do at least three things that most companies today do not do (see Attachment B):

- inventory the flow of toxic materials and wastes through its production units;
- estimate the costs associated with the use of toxic chemicals or pollutants, including the cost of pollution control, waste management, employee protection, and insurance; and
- identify pollution prevention options, assess their technical and economic feasibility, and select those appropriate for Implementation.

EDF urges the subcommittee to study Senator Lieberman's Hazardous Pollution Prevention Act (S. 980) as the subcommittee discusses this issue. There are also a recent EPA guidance on the elements of a waste minimization program ⁴, and several state pollution prevention planning laws, particularly in Massachusetts, New Jersey, Washington, and Oregon, which might provide interesting lessons as well.

Point Source Technology Based Controls

Current EPA Best Available Technology (BAT) standards are based on the BAT technology's "best" performance in a single medium. In developing these standards, EPA typically neither accounts for environmental impacts in the other media, nor prohibits use of technologies that impact the environment through other media. As a result, EPA is allowing—and inadvertently promoting—pollution control technologies that may merely shift the point of harm to human health and environment, without reducing that harm, all at great cost to industry.

EPA should instead base BAT standards on candidate technologies' total impact to human health and environment, regardless of the media of impact, and should specify limits to all media in the standards.

In addition, Congress should make it clear that EPA may use pollution prevention technologies candidates as BAT reference technologies, then EPA finds pollution prevention technologies available and appropriate for an entire industry segment. Under the Clean Air Act, EPA has been requiring states to adopt regulations based on pollution prevention technologies for years.

Several provisions in section 201 of S. 1114 address these issues.

Conclusion: Towards a Whole Facility Approach

Ultimately, we would hope to see the development of a "whole facility" approach to environmental protection. Such a whole facility approach would include:

- a one-stop multi-media permitting program which includes a facility planning requirement, provides companies with technical assistance upon request, provides companies and permit writers with the latest information on verified pollution prevention technologies ⁵ and financial assistance programs, and by streamlining and accelerating permit reviews and cutting fees makes the administrative burden of a permittee seeking to dramatically exceed the minimum BAT standard dramatically less than that of merely meeting the minimum.
- a reporting requirement which consolidates and rationalizes the many single-program reporting requirements faced by the company into one report, free of redundancy and nonsense, with assistance provided if needed, and with protection of legitimate trade secrets.
- a multi-media compliance inspection and enforcement program with a bias towards pollution prevention in enforcement actions.

EPA's Source Reduction Review Project takes an important step in the developing such an approach, as do the efforts of states such as New Jersey and Massachusetts (see Attachment C). Toxic pollution prevention language of the sort contemplated in S. 1114 would take us yet a quantum leap closer to a whole facility approach. EDF applauds the effort of the subcommittee to make the leap and looks forward to working with the subcommittee to further perfect that effort.

Attachment A

WHAT THEY ARE SAYING ABOUT POLLUTION PREVENTION

Here's what a Clinton-Gore Administration will do:

Support effort to mandate public reporting on toxic chemicals used and produced by companies, and *require those companies to develop plans for reducing their toxic chemical use.*

"Putting People First" (1992)

Governor Bill Clinton and Senator Al Gore (emphasis added)

Designing products and processes (or redesigning existing products and processes) with a system to identify health, safety and environmental impacts throughout the product life cycle is one of the most effective ways of managing the product risks . . . One objective of this Practice is attainment of the preferred environmental hierarchy: source reduction: reuse; recycling; and disposal. Source reduction includes equipment or technology modifications, process or procedure changes, product reformulation or design, substitution of raw materials, and improvements in housekeeping, maintenance, training or inventory control.

Product Stewardship Code of Management Practices
Chemical Manufacturers Association

Turning environmental concern into competitive advantage demands that we establish the right kind of regulations. They must stress pollution prevention, rather than merely abatement or cleanup. They must not constrain the technology used to achieve them.

Properly constructed regulatory standards, which aim at outcomes not methods, will encourage companies to re-engineer their technology. The result in many cases is a process that not only pollutes less but lowers cost or improves quality.

Michael Porter

Harvard Business School, 1991

EPA should emphasize pollution prevention as the preferred option for reducing risk. By encouraging actions that prevent pollution from being generated in the first place, EPA will help reduce the costs, intermedia transfers of pollution, and residual risks so often associated with end-of-pipe controls.

Preventing pollution at the source—through the redesign of production processes, the substitution of less toxic production materials, the screening of new chemicals and technologies before they are introduced into commerce, energy and water conservation, the development of less pollution transportation systems and farming practices, etc.—is usually a far cheaper, more effective way to reduce environmental risk, especially over the long term.

"Reducing Risk"

EPA's Science Advisory Board, 1990

Attachment B

THE EPA—AMOCO YORKTOWN REFINERY PROJECT

EPA and Amoco recently cooperated on a project to examine multi-media and pollution prevention issues at an Amoco oil refinery in Yorktown, Virginia. The two most important lessons of this often-discussed project are usually overlooked.

The first lesson regards an Amoco blind spot: It is remarkable how little the company knew, before the project, about the fate of all the valuable hydrocarbons entering and exiting their Yorktown refinery. The Yorktown refinery is a unit of one of the world's largest corporations, one with a large engineering staff. The moderately-seed refinery is 35 years old and uses a standard technology. Every hydrocarbon molecule released as pollution to the air or the Chesapeake Bay is a molecule that can not be sold by Amoco as a product. In other words, the Yorktown refinery is exactly the type of facility whose management one hopes would know the fate of every pound of potential product/pollutant.

In fact, before the project Amoco knew very little about the releases of product from the refinery to the environment. The monitoring Amoco performed as part of the project greatly advanced general understanding about pollution from refineries.

Amoco's lack of self-knowledge went beyond the question of how much product was being lost as pollution: Amoco was not structured to prevent that type of loss at the source. During the project, process and mechanical engineers from Amoco's Chicago headquarters met with the Yorktown refinery's operators to develop pollution

prevention strategies—i.e. changes to the refinery's production process that could reduce product loss (read "pollution") prior to any end-of-pipe recycling or pollution control. According to the Amoco employees in attendance, this meeting was the first of its kind at Amoco (and may even have been a first for the oil refinery business). In effect, Amoco had previously compartmentalized its design, operation, and environmental protection functions as severely as EPA had compartmentalized its air, water, and waste programs.

None of this necessarily calls into question Amoco business decisions. After a point, it no longer pays to track down every leak for the sake of selling the otherwise-leaked product. At some point the marginal cost of controlling leaks exceeds the marginal value of the product at the pump. Unfortunately for the environment, however, an amount of product too small to be worth saving for its own value may nevertheless have a big impact on the environment.

Which leads to the second lesson of this couplet, one which goes to a blind spot in our environmental protection system. If it is surprising how little Amoco knew about its loss of product to the environment, it is alarming that EPA regulation's did not lead Amoco to learn more. EPA's regulatory programs treat the Yorktown refinery as a bundle of smokestacks and drain pipes, each with a separable pollution problem, rather than as a whole connected facility. In taking this one-pipe-at-a-time view of the refinery, EPA perversely (and inadvertently) led Amoco away from tracking down and preventing product from becoming pollution.

The EPA-Amoco Yorktown project's true value was in illustrating what many observers are starting to realize: (1) industry does not always prevent pollution as much as it could, partly because (2) EPA's one-pipe-at-a-time programs can lead industry away from prevention.

Attachment C

THE MASSACHUSETTS BLACKSTONE PROJECT

In 1989, the Massachusetts Department of Environmental Protection (DEP) decided to do something about the confusing and sometimes conflicting signals sent by the separate air, water, and waste inspectors that could visit any given Massachusetts company.

Like EPA and nearly all state environmental agencies, DEP's air, water, and waste programs were separate and often not closely informed of each other's actions. This often had unfortunate consequences both for the environment and for the businesses regulated by these programs.

For example, a company could be required by DEP's water program to install a wastewater treatment system, learning only later of the expense and liability associated with the hazardous waste generated by the system. A company installing end-of-pipe control devices to capture waste solvent headed for the air or water might never learn of safe substitutes for the solvent which would obviate the need for the control devices.

DEP wanted to change this and, in particular, wanted to transmit the message that pollution was a problem regardless of media, and that the best way to approach the pollution problem was to prevent it. To do this, DEP came up with the Blackstone Project.

In the Blackstone Project's first pilot year, the project tested different methods of:

- coordinating air, water, hazardous waste, and right-to-know inspections;
- issuing enforcement actions that led violators to use toxics use reduction as the primary means of compliance; and
- coordinating regulatory activities with technical assistance.

At the project's core was an attempt to treat each business like a business, rather than a bundle of smokestacks, drain pipes, drums of waste.

The project was a success. Among other things:

- Blackstone inspectors were better able to detect hitherto unpermitted wastestreams and were able to perform inspections in less time than typically allotted for those inspections.
- Companies inspected by Blackstone inspectors were found more likely to seek out technical assistance and subsequently implement pollution prevention.
- Over 80% of the companies inspected said in a later survey that they preferred Blackstone inspections over standard single-media inspections—even though most of them were subject to enforcement actions resulting from the Blackstone inspections.

The approach taken by the project has flourished and is being expanded statewide.

ENDNOTES

1. This testimony follows EPA's lead in defining "pollution prevention" as essentially equal to "source reduction" as defined in the Pollution Prevention Act of 1990:

"source reduction" means any practice which—

(i) reduces the amount of any hazardous substance, pollutant, or contaminant entering any waste stream or otherwise released into the environment (including fugitive emissions) prior to recycling, treatment, or disposal; and

(ii) reduces the hazards to public health and the environment associated with the release of such substances, pollutants, or contaminants.

The term includes equipment or technology modifications, process or procedure modifications, reformulation or redesign of products, substitution of raw materials, and improvements in housekeeping, maintenance, training, or inventory control.

(Emphasis added. See EPA Memorandum on "EPA Definition of "Pollution Prevention", from F. Henry Habicht II, Deputy Administrator, May 28, 1992.)

2. "EPA Releases 1991 Toxics Release Inventory Data", *EPA Environmental News* (EPA news release), May 25, 1993.

3. Created by the Emergency Planning and Community Right-to-Know Act of 1986.

4. "Guidance to Hazardous Waste Generators on the Elements of a Waste Minimization Program", EPA, 58 FR 31114 (May 28, 1993).

5. For more on verification of environmental technologies see S. 978, Title IV, Subtitle A.

TESTIMONY OF BRUCE BAKER, DIRECTOR, WATER RESOURCES MANAGEMENT, WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Mr. Chairman, members of the Subcommittee, my name is Bruce Baker. I am the Director of the Bureau of Water Resources Management of the Wisconsin Department of Natural Resources. I am here today representing the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), as a member of the Board. As you know Mr. Chairman, ASIWPCA is the national professional organization of State officials responsible for implementing water quality and related programs in the States.

Let me take this opportunity to thank you, the members of the Subcommittee and your fine staff, for the continued access you have provided ASIWPCA and the States. We can identify many areas in S. 1114 where you have taken the States' concerns to heart. Our testimony today focuses on Water Quality Standards (WQS) policy, effluent guidelines, toxics, pollution prevention and NPDES permit and enforcement requirements. The ASIWPCA membership is in the process of reviewing S. 1114 and our Association will compile comments at our August Annual Conference. Once that review is complete, we will forward our more detailed comments to you Mr. Chairman.

The 1972 Clean Water Act set specific goals and requirements for enhancing our nation's waterways under which significant accomplishments have been achieved. It is time for us to collectively review our progress and examine outstanding issues that need to be addressed. The States' recommendations are premised on the following principles:

1. The Clean Water Act is fundamentally sound. Significant refinements should, however, be made to address program effectiveness including:
 - Increased funding for State management.
 - Continued Federal capitalization of the State Revolving Loan Fund (SRF).
 - Increased State flexibility to operate programs more efficiently and effectively, to maximize environmental results and undertake comprehensive approaches.
 - Elevated USEPA priority on the program's fundamentals—(eg: up-to-date effluent guidelines and WQS).
 - Enhanced nonpoint source management programs in the States.
2. States must continue to have the lead role in program development and management. Delegation of NPDES and SRF programs are cost effective, managerially efficient and institutionally appropriate.
3. Additional time is needed to carry out the 1987 Amendments. Lack of funding, inadequate technical resources and late issuance of policy and regulatory guidance have created unnecessary delays which must be accommodated in any reauthorization.
4. Any new mandates must be accompanied by increased funding above the current baseline.

RECOMMENDATIONS SUMMARY

It is our Association's view that:

- While S. 1114 recognizes the need to update and expand Water Quality Standards and effluent guidelines, significant changes in WQS policy are unnecessary and disruptive of program momentum.
- The permit and enforcement program is fundamentally sound, though woefully underfunded. S. 1114 attempts to address this funding issue, but it must be recognized that NPDES fees envisioned in S. 1114 are *only* adequate to bring the existing program up a base level of performance.
- Limiting and eliminating pollution should be a solution of choice, without being too prescriptive.
- Rather than focus on programs that function well, the Bill should address the nation's priority problems, particularly nonpoint source management. As with the 1987 Act, another round of standards and point source requirements *will preclude getting to that important agenda.*

ASIWPCA is very concerned that a myriad of new requirements in the Bill will greatly increase program complexity and administrative burdens, exacerbate the extensive backlog of expired permits and contested cases and have little positive impact on the quality of our environment.

WATER QUALITY STANDARDS

WQS have been the heart of State implementation of the national water quality laws for almost 30 years. Given the diversity of natural environments throughout the nation, *ASIWPCA's position has consistently been that States must have flexibility to develop WQS, tailored to meet individual hydrology, geology, topography, ecosystem and climate considerations.* A top down "cookie cutter" approach prevents such efforts, inhibits innovation and thwarts aggressive and/or creative approaches, which can result in national improvements. The State adoption process is a efficient method to expedite implementation with extensive outreach and education. WQS policy *should not* inhibit public involvement or limit the States' ability to accommodate advances in science.

States recognize the importance of maintaining a level of national consistency. The water program suffers from outdated Federal Section 304 criteria and lack of clear national policy on their application. This has caused unnecessary challenges in the development of individual control strategies and pollution prevention. States have had to resolve USEPA guidance issues, which has resulted in delayed promulgation, proliferation of litigation, delayed permits, and unwarranted inconsistencies across States.

However, the primary responsibility for establishing WQS must remain with State and Interstate Agencies. The burden of proof for disapproval should always rest with the USEPA. *Presumptive applicability, as described below, is unacceptable to the States*, because it recognizes neither the responsibilities and authorities of the States, nor actual water quality needs. Approval should remain a State process. USEPA and appropriate Interstate Agencies should be provided with a opportunity to review the standards to assure interstate compatibility and compliance with guidelines. USEPA needs to focus more on its vital role of providing States with technical information and coordinating Federal interests.

States applaud the Bill's effort to set USEPA on a better course by expediting and improving criteria development. USEPA needs to develop a strategic plan under which they are given wide latitude to identify priorities. And, States must be assured of a formal and prominent role in the preparation of this plan in conjunction with USEPA, because they are at the forefront of standards development and implementation.

- As the bill recognizes, USEPA should develop national mixing zone policy. However, the specific criteria on acute toxicity and minimum flows, included in the Bill, may create an unplementation problem, particularly with the terminology used.
- States support requiring all Federal Agency programs, projects and facilities to comply with State WQS. Such compliance is critical to achieving the goals of the Clean Water Act. ASIWPCA is pleased to see the proposal requiring applicants (in proceeding under FIFRA and TSCA) to provide complete data and information on the toxicity of compounds. We urge the Committee to *go several steps further*, specifically:

- 1) *Implementation*: All new or revised criteria need to include an implementation component on translating criteria into permit limits, to address basic issues on which there is commonality (i.e. criteria, alone, are not effective).
- 2) *Intermedia Impacts*: The Law needs to address further control of air deposition and specify applicability to CERCLA and RCRA actions, where it has been demonstrated that such sources violate WQS.
- 3) *Fish Advisories*: A nationally consistent approach to fish advisories is needed among the various Federal agencies. USEPA should provide guidance and technical assistance.

- We must share with you our concern that, in some areas, *the Bill goes too far* interfering with State decision making authority. Complex mandates are not justified when neither resources nor scientific evidence can support such requirements. If S. 1114 were implemented, as is, the standards process upon which the entire Act depends would be hopelessly mire down. This would severely curtail watershed planning and other comprehensive management efforts.

Presumptive Applicability: States oppose, in the strongest terms, S. 1114's presumptive applicability of Federal criteria. The balance between State/Federal roles and responsibilities must be maintained. *Section 304(a) criteria are not perfect and USEPA does not have the ability to second guess States*. In most instances States have better information, more innovative means of developing the data and more efficient and success ways to create standards that will meet the Act's goals and objectives. Presumptive applicability could result in the loss of these significant State contributions. And with State adoption, the nation gets firm commitment to monitoring and attainment of those criteria. Implementation would otherwise be delayed and the environment would suffer.

Biological Criteria: States should be able to adopt numerical chemical and/or numerical or narrative criteria for toxics, with flexibility to translate standards into specific numeric permit limitations. *S. 1114 is too prescriptive*—relying on only numeric criteria—which may or may not be protective of the ecosystem.

Uses: All waters should have designated uses, determined in the context of the express goals and objectives stated in Sections 101 and 303 of the Act. However, States oppose USEPA automatically applying a fishable/swimmable classification. Again, States should be in the leadership role, with USEPA held to the same justification requirements as States. In some areas, fishable/swimmable quality is impossible or unreasonable due to natural or other conditions.

Antidegradation Policy: The definition of outstanding national resource waters (ONRWs) and waters of ecological significance in S. 1114 can include such a large number of waters that it can weaken the significance of the designation. Some waters identified for designation, (eg. recreational areas, wildlife refuges and waters supporting threatened and endangered species), simply do not deserve the special level of protection envisioned. These types of waters should be evaluated to determine their suitability (on a site-specific basis) for inclusion as ONRWs, etc. Meeting established WQS in these waters will, in most instances, protect these uses without the special designation. Again, States need flexibility to implement successful, locally tailored programs.

EFFLUENT LIMITATIONS

The Association supports S. 1114's effort to update effluent guidelines Categorical effluent limitations a the regulatory cornerstone of the Act and primary tool for working toward elimination of pollution discharges, including pollution prevention, waste minimization and recycling. These guidelines serve as an equitable program baseline.

The majority of existing best available technology economically achievable (BATEA) guidelines are seriously outdated, thus of little value in the regulatory program. States are forced to rely on WQS to establish proper effluent limitations. This process is resource intensive, and most States are not in a position to develop the industry-by-industry data. Updated national guidelines can avoid the inefficiencies of ad hoc best professional judgment and associated inconsistencies, inequities and negative incentives. States believe that the objectives outlined below can be accomplished in a manner that is workable for all concerned.

States agree with S. 1114 that USEPA must publish and update effluent guidelines under Section 304(b) of the Act to:

- Establish aggressive deadlines for industrial categories not yet addressed.
- Better define BATEA to assure they, in fact, reflect the best currently available.
- Update the factors set forth in 304(b) for BATEA and specifically address pollution prevention and waste reduction measures.

In addition, USEPA should reclassify some nonpoint sources to be point sources (e.g., some urban runoff)—as well as the converse—to protect water resources more efficiently.

TOXICS

States need to place priority on and significantly expand their programs in the area of nonpoint sources. Though States have remaining concerns about toxics *USEPA needs broad flexibility* to focus on the most important toxic problems in the most effective and expeditious manner to minimize substances unacceptable in the environment. Dictating particular solutions will not, in our opinion, solve the problem. We suggest that:

- USEPA needs expanded Clean Water Act authority to revise requirements in other media programs in order to protect water quality (see also Pollution Prevention).
- A high priority for 304(l) listed pollutants or waters is not always justified. Other waterbodies and pollutants may well be the major impediment to water quality goals.
- Toxic reduction program requirements should be based on need.
- While prohibitions on discharges of certain toxics are justified, State and USEPA discretion must be provided to determine when and where such actions are appropriate.

POLLUTION PREVENTION

The States commend the Committee for S. 1114's emphasis on prevention of pollution, which can lessen the burden on the permitting and enforcement programs. We have learned that "end-of-pipe" regulation is not always the most effective or efficient way to address water quality problems. However, zero discharge literally means zero availability. Unfortunately persistent chemicals, once in the environment, are likely never to be zero. Some of the requirements in S. 1114 will place too great a burden on State resources. Specifically:

More flexibility is needed. The USEPA should be required to take *agency-wide action* to assure maximum progress toward the goals of pollution prevention and zero discharge:

- *Implementing prohibition sanctions authorized in the Toxics Substances Control Act* to prevent the production and use, in the market place of specific persistent, bioaccumulative toxic substances. Priority should be placed on substances exceeding State or Federal *action levels* in fish flesh. Bans should be an integral part of such a national strategy.
- *Listing toxic substances for which the discharge, emission, and release shall be minimized in all media programs* (air, water, waste management, etc.). States should be able to have regulatory programs that go beyond traditional technology or water quality based programs.

NPDES PERMITTING AND COMPLIANCE

S. 1114 addresses the major problem in the existing permit and compliance program—*lack of resources*—to implement existing requirements. States are concerned however about other aspects of the proposal because:

- *There is no demonstrated need for many of the Bill's NPDES provisions.* Some will undermine State delegation and create complex mandates for which there are neither resources nor environmental justification. The Bill would further slow the program, with endless controversy and litigation. *What States need is a streamlined program to achieve more environmental results, not a more complex burdensome process of paper shuffling.*
- *Permit fees will only provide enough resources to bring the existing program up to a basic level of performance.* Even then, proposed restrictions on permit fees may not allow States, which are now 100% funded by State fees, to accommodate needed growth.

Delegation:

- States strongly oppose S. 1114's extensive Federal intrusion into the State permit process, with "helter-skelter" overfilling and second guessing. The program will not work, unless States maintain their lead role. A well structured and predictable process is essential to the program's success. If States are not performing adequately, any problems should be addressed through the existing permit and delegation review procedure.
- States should not be sanctioned by USEPA issuance of backlogged permits—the problem is:
 - 1) A lack of resources.
 - 2) Incomplete, late or vague national policy.
 - 3) Inadequate USEPA science and public education.
 - 4) Contentious permittees.

If these are overcome, States can and would manage fully effective permit programs.

- In order to protect water quality, States should be allowed to regulate vessel discharges more restrictively than the Act requires. The vessel population in some States is increasing annually by 10% predominantly in waters classified for swimming and recreation. More attention is clearly necessary in this area.
- Field citation authority would be beneficial, but should be delegable only to States—not contractors. States should also be able to file suit, using USEPA's enforcement authority under Section 309.
- USEPA should use its administrative penalty powers under Section 309 only if a State has failed to take sufficient action. In such situations, States must be consulted and provided with an opportunity to respond and/or, if necessary, take additional action. S. 1114 circumvents the current process which was worked well for many years.
- States should not be required to have monetary penalties identical to USEPA's. States have a host of enforcement tools and mechanisms, in addition to penalties, to achieve compliance. The stipulated amount exceeds the levels imposed on USEPA and could be particularly onerous for small municipalities and small business.
- § 106 funds should not be sanctioned (up to 35%) if State agencies, despite good faith efforts, do not have a \$10,000/day administrative penalty or expanded judicial review. The monitoring, standards and watershed programs will suffer—along with MPDES, thus demeaning the entire State program. This seems contrary to the Senate's intent embodied in S. 1114. It would be more effective, for example to "deputize" States, giving them authority to apply USEPA penalties.

Requirements:

- Achievement of WQS should be the objective. Adding other requirements, (i.e. protection and propagation of a balanced population of shellfish, fish and wildlife), is unnecessary, confusing and extremely difficult to determine or measure.
- Section 403 criteria *should not be expanded*. The process is already complex and onerous. The existing law is adequate to protect the resource.
- Permits should not be required prior to construction.
- 10 year permit terms should be authorized (with re-opener clauses to deal with scientific or water quality changes). States should be able to put permits on a stable workload cycle.
- Changes in pretreatment requirements are not needed. The program is adequate and the current municipal workload is already overwhelming. The establishment of pretreatment standards equivalent to categorical limits may not achieve desired results, but will increase the already extensive State permit workloads.
- The expanded judicial reviews in S. 1114 will encourage delay and wasteful litigation.
- Use of civil penalties for beneficial projects and restoration of natural resources may be appropriate. However, State consultation should be required in determining suitable options.
- Requiring courts to consider previously imposed penalties will make it difficult for States to secure timely settlements with violators.
- There is no demonstrated need to further encourage citizen suits. They have been of limited value in addressing priority problems and for past violations would accomplished little. Often citizen suits duplicate rather than enhance State action. And, while such suits can be of utility, they should be used to take initiative when government is unable to do so.

- We question whether USEPA emergency powers need to be expanded to instances when there "may be" an imminent threat. This is an extremely broad and vague standard. State consultation should be required to minimize inconsistency and promote appropriate action.

ANTIBACKSLIDING

The existing law is confusing on application of anti backsliding policy in the NPDES process. Permittees are reluctant to accept effluent limits if the requirements make it impossible to relax limits in the future—even for justifiable reasons. This has resulted in endless conflict with the State regulators that significantly delays permit issuance. The policy has impeded State adoption and implementation of new WQS and discouraged dischargers from performing better than permits require. Limits that became unnecessary over time, still require monitoring and compliance. This is so, even though the resources could be put to better use in permit oversight. S. 1114 should allow the removal or modification of effluent limits in cases where:

- The limit is determined to be *unnecessary* because of errors in calculation,
- *New scientifically valid information* is published, or
- A determination is made that *the substance is not present* in the discharge.

In no instance should removal of a limit allow a permittee to reduce the level of existing treatment technology.

SUMMARY

Mr. Chairman, the Association appreciates your leaderships, and that of Senators' Baucus and Chafee, in providing a legislative vehicle for national debate on Clean Water. As you proceed to refine the Bill, ASIWPCA and the States look forward to working closely with you and your staffs. I am delighted to answer and questions and thank you again for inviting me to join you today to discuss Clean Water.

STATEMENT OF ANITA DAWSON, MANAGER, ENVIRONMENTAL AFFAIRS, AMERICAN CYANAMID COMPANY

Good morning. My name is Anita Dawson. I am Manager of Environmental Affairs for the American Cyanamid Company. I am appearing today on behalf of American Cyanamid and the Chemical Manufacturers Association (CMA) to discuss our views on pollution prevention in the context of the toxics controls proposed in S. 1114, the Water Pollution Prevention and Control Act of 1993.

CMA is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity of basic industrial chemicals in the United States. The chemical industry provides 1.1 million high technology, high wage jobs for American workers and consistently maintains positive trade balances. CMA's members are directly and significantly affected by the requirements of the Clean Water Act.

Mr. Chairman, the Clean Water Act is a pollution prevention statute. Its existing controls on industrial point source discharges have proved very successful. Dramatic improvements to water quality have resulted and will continue to occur under existing law as dischargers comply with increasingly more stringent technology-based and water quality based limits. These controls are challenging companies to look beyond end-of-pipe treatment towards other pollution prevention practices such as source reduction and recycling. The results of all these efforts are nothing less than remarkable. EPA data reveal that less than 10 percent of the remaining water quality problems of the nation can be attributed to industrial discharges. Reductions in discharges of toxic pollutants are particularly encouraging. According to information supplied to EPA's Toxic Release Inventory, Clean Water Act standards adopted in 1987 have helped reduce chemical industry discharges to America's waters by 77 percent in just five years.

This committee is considering a bill, however, which does not reflect these positive trends. Instead, it imposes overly intrusive, extreme and unnecessary requirements on industrial point source discharges. These requirements would not promote pollution prevention; they would discourage it. In particular, the effluent guidelines and toxic discharge prohibitions sections of this bill would have this negative effect. I'd like to discuss these provisions today and will elaborate on a number of other concerns we have with S. 1114 in our more detailed written statement.

This bill requires EPA to establish effluent limitation guidelines on the basis of changes in production processes, products and raw materials. We believe this is an

inefficient, inflexible and improper approach to pollution prevention. It wholly disregards the complex nature of manufacturing and product development. There are literally thousands of manufacturing processes in use in American industry today. The chemical industry alone uses hundreds of unique operations. End-of-pipe standards that *require* raw material substitution or process modifications cannot adequately reflect these variables. At a minimum, they would inhibit industry's ongoing development of innovative and cost effective pollution prevention technologies and techniques. More harmful is the threat that these standards pose to the competitiveness of U.S. manufacturing industries. These standards would result in the discontinued use of effective manufacturing processes, in the phase-out of many beneficial products, and in the significant impairment of the quality of other products. The inappropriateness of EPA requiring changes in production processes, products and raw materials cannot be overstated. The effect would be minimal environmental protection, at a huge cost and competitive disadvantage to industry generally, as well as a loss of jobs throughout the economy.

Mr. Chairman, industry already analyzes its processes, raw materials and products to determine how best to prevent pollution in order to meet effluent limits. It invests much time and money to do so. Incentives to further *encourage* industry to perform these analyses would be a better approach to pollution prevention than the heavy handed, command and control approach described in this bill. Pollution prevention is not a "one size fits all" proposition. Flexibility is key. Every company practicing pollution prevention today knows this.

For example, my own company has developed a pollution prevention project that involves changing a process from a batch oxidation reaction process into a continuous process step. This change is reducing wastewater pollutant loading by 50% and volume by 25%. It's also increasing product yield and product quality. It has not been a simple project, however. It's taken more than 6 months of laboratory development, small-scale testing and finally full-scale testing to develop. This testing included verifying the reaction would work, lab stress experiments, testing the impacts on each processing step, analyzing the products and by-products of each step, refining analytical procedures for new conditions, evaluating scale-up effects and finally full-scale trials. The project has involved a research chemist, an analytical chemist, lab personnel, a process chemist and a process engineer. Many ideas were tested that did not work.

The point I'm trying to make is that any manufacturing process, product or raw material changes—whether to effect pollution prevention, product yield or product quality—are extremely complex decisions that do not lend themselves to inflexible regulatory *compliance* schemes such as best available technology standards under the Clean Water Act. These types of changes are extraordinarily site specific. Pollution prevention decisions are constrained by technological feasibility, economics, and product quality. Even simple changes in the suppliers of raw materials requires detailed evaluations of the material's effects through all the process steps. Process and product changes also raise the question of the interrelationship with other product control laws. Many of my company's products are FIFRA registered products. If a process modification changes minor components of the final products, we must modify its FIFRA registration—a process that takes one to two years—before we can make the change. This would raise compliance problems under the Clean Water Act.

From a resource perspective, development of end-of-pipe standards on an industry-by-industry basis that could even moderately reflect—much less *require*—"best available" production processes, products and raw materials within industries would be prohibitively resource intensive given the enormous complexities. The type of major R & D effort that EPA would have to apply to accomplish this task would be far beyond what EPA has undertaken in past guideline development efforts. An example is the recently promulgated effluent guidelines for the organic chemicals, plastics and synthetic fibers point source category. EPA declared that the "detailed study and technical development effort on a product/process-by product/process basis" to determine the feasibility of wastewater recycle was "far beyond the scope of what EPA can practicably accomplish." (Final Rule amending 40 CFR 414, signed May 28, 1993, pre-publication draft, p. 28) This comment merely referenced EPA's review of wastewater recycle within the chemical industry. The detailed review of industries processes, products and raw materials that would be required by this bill would be even more impractical.

If effluent guidelines were mandated in accordance with the provision in this bill, the result would be standards that reflected overly broad generalizations about industries. Requiring industries to conform to these generalizations about their processes, products and raw materials would be mandating industry how to manufac-

ture. Attempting to achieve pollution prevention through these type of rigid national standards is an inappropriate approach that would discourage more pollution prevention than it would encourage, stifle innovation, and harm the competitive posture of U.S. manufacturing industries.

The toxic discharge prohibition section of this bill poses a different, although related, set of concerns. It would require EPA to apply the most drastic control measures available under the Clean Water Act discharge bans—simply on the basis of EPA identification of a substance as highly toxic or toxic and highly bioaccumulative. Merely because a pollutant is toxic and bioaccumulative does not mean that its discharge in any amount poses a threat to human health and the environment. Further, the bill does not require that such identification be peer-reviewed by a qualified panel of scientists. There's also no required demonstration of any adverse effects/risks posed by substances identified as bioaccumulative. Finally, there's no review of any economic considerations of such actions. Like the effluent guideline provision, this discharge prohibition takes an overly simplistic approach to pollution prevention. It, too, would place U.S. manufacturers at a disadvantage compared to their foreign competitors.

In short, this provision inappropriately assumes that the only effective way to control these pollutants is to ban their discharge. To justify such an extreme response, EPA, at a minimum, must demonstrate a clear relationship between an identified chemical and an unreasonable risk to human health or the environment. Rather than discharge bans, Congress should apply the full range of risk management options to any newly identified pollutants, considering their adverse effects and exposures.

In conclusion, Mr. Chairman, the changes proposed in this bill are not suggested by the progress achieved to date as a result of the Clean Water Act's controls on industrial discharges of toxics. The two provisions I've discussed today are not appropriate responses to any remaining threats posed to water quality from industrial point source discharges. These provisions are drastic responses to emotionally charged but unsubstantiated claims about industry's contribution to water quality impairment. We urge this committee to re-think its approach to better take into account the significant progress industry has already made and will continue to make under the existing provisions of the Act.

TESTIMONY OF MARTHA G. PROTHRO, ACTING ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY

INTRODUCTION

Good morning, Mr. Chairman and Members of the Subcommittee, I am Martha Prothro, Acting Assistant Administrator of EPA's Office of Water. Accompanying me today is Bill Diamond, Director, Standards and Applied Science Division, in the Office of Water. As Administrator Carol Browner has discussed with you, we believe the Clean Water Act (CWA) is fundamentally sound, but requires some adjustments so that EPA along with our Federal, State, Tribal, local, and private partners can develop innovative solutions for the water quality problems that remain.

Reauthorization gives us an opportunity to solidify our control of toxic pollutant discharges, to help improve the scope and timeliness of water quality standards, and to focus our water program on the highest priority risks to health and the integrity of our aquatic ecosystems. This will enhance our ability to meet the goal of restoring and maintaining the chemical, physical, and biological integrity of our Nation's water.

Under existing statutory authority we have achieved considerable success in substantially reducing the discharge of toxics to our Nation's waters. The Clean Water Act has already enabled us to control millions of pounds of toxicants through technology-based controls. We have established ambient water quality criteria for most toxic pollutants of concerns and we are refining and expanding those criteria as new risks are identified. To make further progress, our primary challenge is to implement these criteria through standards, permitting, and enforcement programs, and to address contaminated fish and sediments that have been polluted by past discharges.

The Act already provides a broad range of tools to EPA and the States, as well as the flexibility to adapt them to different circumstances. We can improve some of these tools, but we should avoid the temptation to add new requirements and deadlines merely because some toxic hot spot areas still remain in our waters. We can address most problems with existing authorities. Before adding new mandates, we should consider whether current law in fact will suffice, whether the remedy pro-

posed appropriately addresses the problem at hand, and whether we are responding proportionately to the range of stresses that impair water quality. Priorities and resources need to be assigned to all remaining risks, including nutrients, pathogens, habitat loss and other problems as well as toxics.

TECHNOLOGY-BASED APPROACH

The CWA provides technology-based and water quality-based approaches for controlling the discharge of pollutants from point sources into surface waters. If the technology-based controls are not sufficient to protect the desired uses of the waterbody, then water quality standards provide the basis for further controls.

Under the technology-based program of the Act, EPA requires municipal sewage treatment plants to achieve secondary treatment at a minimum and requires industries to meet effluent limitation guidelines, new source performance standards, and categorical pretreatment standards. Effluent limitation guidelines and standards are based generally on the best technology available that is economically achievable. In developing effluent limitation guidelines and standards, EPA currently considers source reduction and recycle and reuse technologies—not just end-of-pipe controls—as the basis for effluent limitations. We also consider the potential transfer of pollutants to other media in setting discharge limits. We have promulgated 51 technology-based effluent guidelines covering over 100 different industries. We will promulgate another 20 new or revised guidelines over the next 10 years. These guidelines set numeric limits as appropriate not only for the 126 priority pollutants under section 307(a), but also for any appropriate conventional and nonconventional pollutant for which analytic methods are available. (Currently, more than 300 such pollutants can be regulated.) The technologies that industries typically employ to meet effluent guidelines generally remove many more pollutants than are specifically regulated.

One of the reasons that the effluent guideline program has been successful is that we base our decisions on simple formula: available technologies (including source reduction and process changes) that are economically achievable by industry. Several provisions of S. 1114, however, will help to improve the technology-based guidelines program and stimulate a pollution prevention ethic in industrial dischargers.

Streamlining Technology Standard Developments for Effluent Guidelines

Current law requires that EPA apply several different thresholds to direct dischargers in setting guidelines. Limits are then set based on best practicable technology, best conventional technology, or best available technology, depending on the type of pollutant. The separate analyses are complex and difficult to administer and can cause significant delays in the guidelines development process, and may not result in better (or different) control requirements. The Administration supports the goal of S. 1114 of moving toward a more streamlined set of standards, but has not yet established a position on appropriate thresholds.

Special consideration should also be given to conventional and other pollutants that biodegrade in publicly owned treatment works (POTWs) after discharge by industry. In other words, industry would not be required to treat pollutants that the receiving POTW adequately treats, although EPA would regulate pollutants discharged to sewers when the POTW cannot provide treatment. Current law also addresses this issue by establishing a complex system of pass through and interference analyses, along with removal credits for individual dischargers. This approach has its limitations for a variety of reason, including technical difficulties, litigation problems, and resource limitations.

PRETREATMENT

In the last decade, the National Pretreatment Program has evolved into a mature environmental program with local governments effectively regulating most industrial and commercial discharges to POTWs. Over 1,500 POTWs have approved local pretreatment programs designed to protect against the adverse effects of industrial and commercial discharges to municipal sewer systems. These local governments regulate over 30,000 "significant industrial users" of their sewer systems by establishing "individual control mechanisms." POTWs also conduct routine inspection, monitor, and take enforcement actions, as appropriate. They control an even greater number of smaller industrial and commercial users, through less formal means, where this control is warranted. For example, small commercial sources, such as photofinishers and service stations on an individual basis may not pose a concern; in the aggregate, however, they may discharge significant quantities of pollutants that interfere with the municipality's treatment processes, volatilize into the air or into the sewer system, persist in wastewater treatment sludges, or go untreated into re-

ceiving waters. Municipalities are improving their understanding and their controls of all of these sources.

The pretreatment program is a multi-media environmental program designed to address water quality, land disposal and air emissions problems, as well as the safety of sewer workers. A POTW with an approved pretreatment program evaluate whether local controls is needed, in order to: (1) protect the sewer system and wastewater treatment plant capability, (2) protect water quality and enable the POTW to comply with its National Pollutant Discharge Elimination System (NPDES) permit limits, (3) ensure sewage sludge of sufficient quality to comply with EPA's national sewage sludge regulations, and (4) protect the health and safety of POTW workers. Industrial pretreatment controls may also provide a vehicle for reducing air emissions of volatile organic pollutants that would otherwise be released from sewers of POTWs. Many cities have demonstrated impressive improvements in effluent and sludge quality as a result of effective local pretreatment programs.

Based on our experience in implementing and overseeing this program, we support the following changes: EPA should have authority to issue individual control mechanisms to significant industrial users when there is no approved local or State program, and removal credits should be restructured and reconsidered. We also believe that the domestic sewage exclusion under the Resource Conservation and Recovery Act (RCRA) should be retained.

EPA regulations require POTWs with approved local pretreatment programs to issue "individual control mechanisms" to all significant industrial users. These individual control mechanisms are functionally equivalent to the NPDES permits issued by EPA and States for direct dischargers. They contain applicable effluent standards, monitoring requirements, reporting requirements, and other appropriate controls. In most cases, a State or locality runs the pretreatment program locally. However, in some circumstances, EPA must act as the "control authority" because there is no approved local pretreatment program or approved State pretreatment program. EPA, however, has no direct authority to issue an individual control mechanism to an indirect discharger. We believe that EPA and approved States should have the authority to issue appropriate individual control mechanisms to significant industrial users when they are not subject to an approved local pretreatment program.

The removal credits provision was intended to allow an industrial user to increase the amount of a pollutant that is discharged to a POTW above the level that would otherwise be allowed by a national categorical pretreatment standard, provided the POTW can demonstrate that its treatment works consistently removes those pollutants and does not exceed water quality or sludge limits in its permit. Historically, as few as thirty POTWs have expressed an interest in obtaining or actually have received approval for the authority to issue removal credits. Resource constraints, equity concerns and a desire to provide a margin of safety for the POTW have all been cited as reasons for low interest. Another concern with removal credits is that a POTW may be able to demonstrate that a pollutant is not being identified in tests of its effluent. In such instances, the pollutant may not actually be removed but is simply transferred to the sludge or the air, where it contributes to a violation of standards. Alternatively, the pollutant may be undetectable in the effluent using current analytical techniques, and nevertheless cause significant risks.

Even if the law is changed so that categorical pretreatment standards set industry limits for all but those pollutants that are biodegradable in the POTW, there still is a need for removal credit authority, because categorical pretreatment standards might still regulate some pollutants that are not consistently biodegradable at the typical POTW but may be fully biodegradable at site-specific POTWs. For such pollutants, removal credits would be appropriate but only for those toxic pollutants shown to be removed through biodegradation in the POTW. Therefore, we generally support S. 1114's position on removal credits as the best environmental, technical, and programmatic approach.

The third issue is the appropriateness of retaining the domestic sewage exclusion or limiting its applicability. The domestic sewage exclusion [specified in section 1004(27) of RCRA] provides that a hazardous waste, when dissolved in domestic sewage (e.g. sewage from residences), is not a hazardous waste under RCRA. The rationale for the domestic sewage exclusion is that RCRA management of wastes within a POTW is unnecessary and redundant because these wastes are regulated under the Clean Water Act, specifically by the pretreatment program. In the mid-1980's, EPA conducted a study on the discharge of hazardous wastes to POTWs and submitted a report of the study to Congress in February 1986. The report concluded that the domestic sewage exclusion should be retained and improvements should be made in pretreatment regulatory controls rather than creating a new RCRA pro-

gram for these wastes. In July 1990, EPA promulgated changes to the General Pretreatment Regulations to strengthen controls on nondomestic discharges, with particular emphasis on wastes that may be covered by the domestic sewage exclusion. States and cities have implemented those changes and we now have a stronger pretreatment program. As a result, we believe that existing pretreatment authorities are the best vehicle for controlling such wastes and that the domestic sewage exclusion should therefore be retained.

We also believe it is unwise to condition the applicability of the domestic sewage exclusion on EPA's development of technology-based, categorical pretreatment standards or on the equivalency of local limits with RCRA Best Demonstrated Available Technology standards. One reason is that such an exemption is expected to result in tremendous pressure on EPA and municipalities to issue new regulations under the CWA merely for the purpose of providing exemptions from RCRA. We believe it is critical to maintain environmental protection and risk reduction as the criteria for selecting industries for regulation. Additional controls that are appropriate and necessary can be provided under existing authorities.

POLLUTION PREVENTION

As S. 1114 recognizes, existing effluent guidelines provisions in the CWA should be clarified to promote pollution prevention practices. Historically, the Agency has set numeric effluent limitations, compliance with which is measured at the end-of-pipe. While this has the considerable benefit of allowing dischargers great flexibility in deciding how to meet the requirements, it does not necessarily foster source reduction practices. EPA's experience in over twenty years of effluent guidelines development is that facilities typically use end-of-pipe treatment to comply with the limitations, rather than reduce their source of pollutants or wastewater flows. The Office of Water has verified this in its recent surveys of the pharmaceutical and metal products and machinery industries. Allowing EPA to address intermediate wastewater discharge points should help encourage recycling, reuse and source reduction.

End-of-pipe limits also allow co-mingling of wastewater, which in some cases means that pollutants are present at levels that can cause significant harm but are diluted to levels below detection. While the courts have upheld EPA's authority to set in-plant limits, we believe this authority should be clarified to avoid costly litigation and controversy. We agree that clarifying language would be helpful in allowing the Agency to consider intermediate discharge points. EPA would like to work with the Committee to craft language that will address the dilution issue for case where end-of-pipe concentrations are below detection limits while preserving a facility's flexibility to devise innovative solutions and avoiding requiring EPA to regulate processes.

We also support allowing EPA to address transfers of pollutants to other media. Although EPA currently considers cross-media effects in deciding whether and how to regulate, the CWA does not now allow EPA to preclude use of compliance technologies that simply transfer pollutants from surface water to other media. For example, some chemical plants use air stripping to treat volatile organics in wastewater, as opposed to steam stripping that allows recovery of solvents and prevents direct emissions to the atmosphere. When developing effluent guidelines, EPA should be authorized to prohibit or limit the use of certain technologies where other economically achievable compliance methods are available that would not result in transferring pollutants to other media, taking into account relative costs and environmental benefits.

Current law explicitly authorizes EPA to specify Best Management Practices (BMPs) in effluent guidelines to "control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage . . ." for toxic or hazardous pollutants (section 304(e)). Some industries can generate significant amounts of waste due to spills and leaks that contain conventional or nonconventional pollutants, but these events are not explicitly addressed in section 304(e). Our authority for specifying BMPs needs to be explicitly broadened to cover all pollutants and all sources of pollutants. This will help promote a more comprehensive pollution prevention approach.

WATER QUALITY-BASED APPROACH

To complement these technology-based approaches, the CWA also gives States the primary responsibility to develop water quality standards for waters within their jurisdiction, including rivers, lakes, estuaries, near coastal waters and wetlands. Water quality standards provide the regulatory basis for pollution control and provide a measure for evaluating water quality improvement programs.

Water quality standards consist of State-designated waterbody uses, criteria to protect the designated uses, and an antidegradation policy to ensure that existing uses, high quality waters and Outstanding National Resource Waters are maintained and protected. Through the designation of uses for waterbodies within a State, water quality standards define the goals for the waterbody in terms that we all can understand—fishing, swimming, protection of aquatic life and so on. Water quality standards should not and do not focus only on the control of chemical-specific discharges, but also provide us a way to consider factors affecting the physical and biological integrity of the waterbody as well.

WATER QUALITY CRITERIA DEVELOPMENT

Section 304(a) of the Act gives the Administrator broad authority to develop the sound science and issue criteria, guidance and methods to assist States in the adoption and implementation of their water quality standards. In the 1970's and early 1980's, EPA focussed water quality criteria development efforts on a relatively narrow subset of all water quality problems. Efforts emphasized chemical-specific numeric criteria to protect aquatic life or human health because pollutants were associated with problems perceived as the highest priority at the time, notably problems associated with discharges from point sources. Reflecting these priorities, the statute targeted point source discharges and EPA set its scientific priorities accordingly. We continue to work on addressing some remaining individual chemical pollutants that still cause significant water quality problems, but we also need to shift our attention to give priority to other types of very serious water quality problems. We need a comprehensive set of criteria, methodologies and guidance to accurately assess the health of aquatic ecosystems and support efforts to maintain and restore the physical and biological, as well as chemical integrity of our waterbodies.

Although the Clean Water Act now provides EPA adequate authority to develop a range of chemical, physical and biological water quality criteria, there is no statutory provision for setting priorities based on maximum risk reduction potential, programmatic effectiveness, and other appropriate factors. Both the science and our understanding of environmental problems is rapidly changing, and it is apparent that the opportunities to make scientific progress through the criteria development process are staggering. The needs clearly exceed the level of resources we can reasonably anticipate in the near term. EPA would therefore advise against narrowly focussed statutory requirements that would drive the criteria development process without regard to environmental priorities. For example, we have broad authority and have already developed a powerful arsenal to address chemical-specific pollutants, especially toxics, through the criteria program. These criteria are being adopted into standards and permit limits and will achieve significant water quality improvement. While implementation of the toxics criteria is an ongoing priority in the NPDES permit program, scientific priority must go to the relatively unexplored areas of biological and sediment criteria.

For these reasons, we support S. 1114's provision to authorize the Agency to prepare a comprehensive priority-setting criteria development plan that balances risk and programmatic effectiveness. Our State, Tribal, local, Federal and public partners should participate in establishing these priorities. In this way, we will undertake to ensure that resources will not be diverted away from tomorrow's challenges. This provision should be the engine that drives our criteria program.

CONTAMINATED FISH CONSUMPTION ADVISORIES

Environmental equity considerations require that we address the high risk that contaminated fish may pose to sensitive subpopulations, including pregnant women, native and ethnic subsistence fishers, and those with compromised immune systems. States are responsible for regulating contaminated fish that are not traded in interstate commerce and do so through the issuance of fish advisories. Nationwide, approximately 1200 State fish consumption advisories are in effect, but there is inconsistency in the way they were developed, the level of information contained in them, and the way susceptible populations are informed of the risks. This leads to public confusion about whether recreational or subsistence fishing is a safe way to supplement an individual's diet. The Clean Water Act should authorize EPA to provide factors to be considered in the development and issuance fish advisories.

SEDIMENT CONTAMINATION

Closely related to fish contamination is the environmental risk posed by contaminated sediment. The best information we have indicates that hundreds of sites nationwide have sediment contamination at levels harmful to aquatic life and human health. In accordance with the 1992 Water Resources Development Act, EPA is pre-

paring a national inventory of contaminated sites. In addition, EPA, in coordination with other Federal agencies, the scientific community and the public, has initiated a broad range of activities to address this priority problem. Because there are no simple solutions to the control and remediation of sediment contamination, we need continuing flexibility to address the highest risk reduction priorities in this area in a cost-effective manner. We are learning more all the time about this critical problem but the main difficulties we face in this area do not seem amenable to a legislative solution. We hope to continue working with the Subcommittee in this regard.

STATE WATER QUALITY STANDARDS REVIEWS

Section 303(c)(1) of the CWA requires that from time to time, but at least once every three years, States should hold public hearings to review their water quality standards and, if appropriate, to modify and adopt new standards. This helps ensure that (1) waterbody use designations and goals reflect current conditions, (2) criteria are based on the best current science and address emerging issues, and (3) anti-degradation and other implementation policies, methods and practices are revised or modified to fully meet the goals of the Act.

EPA must review and approve or disapprove State water quality standards and any changes. The Administrator must promulgate standards for a State if a State fails to make appropriate revisions to meet the requirements of the Act.

In practice, States are not reviewing and updating their water quality standards every three years, but frequently take many years longer than the statute now requires. States have many other mandates and problems to address, of course. However, these lengthy delays sometimes amount to serious bottlenecks in developing programs to restore and maintain our Nation's waters. For example, delays in State adoption of water quality standards for toxic pollutants inhibited the effective identification of impaired waterbodies and the establishment of control requirements in NPDES permits under the 1987 amendments. Even though EPA had published most of the aquatic life and human health criteria for toxic pollutants in 1980 and the 1987 CWA amendments required States to adopt numeric criteria for toxics, only 6 of 57 States and territories had complied by February 1990—the end of the triennial review cycle following the 1987 amendments. Most States did not begin to adopt toxic pollutant standards until after 1990 when the Agency initiated Federal promulgation actions. EPA ultimately had to establish standards for 14 States through Federal rulemaking, a process that took two years and eight months to complete. States were given primacy in water quality standards adoption under the CWA largely because it was believed that local conditions and State preferences should be taken into account. EPA continues to support this philosophy, but we note that even with this lengthy adoption process following the 1987 amendments, most standards adopted by States were identical to EPA's national water quality criteria guidance.

At the same time, Federal promulgation is not a perfect antidote to these delays. States deserve to be given deference in adopting water quality standards when they do act in a timely way. Federal promulgations are resource intensive and time consuming for EPA. Moreover, while promulgation of numeric criteria for toxics was important, we also cannot ignore the fact that both EPA and the States had to make difficult resource allocation choices in order to comply with the various mandates of the 1987 amendments.

In order to address these historical problems, we agree with the authors of S. 1114 that the provisions for timely review, update and adoption of State water quality standards should be strengthened and streamlined. We need to maintain the opportunity for State exercise of primacy and substantive flexibility, but we also need to ensure that standards are established in a timely fashion.

Another issue is how to assure that, as water quality programs move toward a watershed focus, the review and revision of waterbody use designations and implementation policies in State standards are coordinated with watershed programs. The current triennial review cycle inhibit those efforts. Triennial reviews may also be incompatible with the increasing complexity and site-specific nature of newer forms of water quality criteria, such as nutrient, salinity, habitat, biological and toxicity criteria. Not only are the new forms of criteria more difficult and time-consuming to adopt than chemical-specific criteria have been, but their application may also need to be different. For example, it may be appropriate to use biological criteria, at least initially, primarily as an assessment and evaluation tool rather than as the basis of a permit limit. Harmonizing the time frames of various complementary water programs (e.g., standards, permits, nonpoint source, estuaries, etc.) would facilitate integration, implementation and evaluation of water pollution control programs. We support adjusting the timeframes to advance the progress of comprehensive watershed protection approaches.

For chemical-specific pollutants, EPA believes that States should adopt numeric water quality criteria based on EPA criteria guidance within a fixed time, perhaps three years, after EPA publishes such guidance. If a State fails to adopt numeric water quality criteria for these pollutants, EPA's criteria should become the applicable water quality standards for all purposes of the Act. For other types of criteria (e.g., nutrient and biological), the Clean Water Act should require State adoption, within four years of the publication of EPA's section 304(a) criteria guidance. (These criteria may require more site-specific consideration by States.) The Senate bill generally helps to move us in this direction. In addition, in place of the triennial review, every five years, States should be required to conduct a comprehensive review of all uses, criteria and policies in their water quality standards, including updating use attainability analyses for all waters that are not designated as "fishable or swimmable" and reaffirming, if appropriate, that these uses are not unattainable. Such an approach recognizes the changing nature and increased complexity of the water quality program. It also retains State flexibility to address water quality standards within a realistic, but timely schedule.

Finally, States should be required to implement antidegradation reviews that specifically protect high quality waters and specifically designate Outstanding National Resource Waters within the State's boundary, although State primacy in designing these waters should be preserved.

TOXIC PROHIBITIONS

Through the Clean Water Act's technology-based and water quality-based permits approach, there has been significant progress in decreasing the discharge of harmful toxic pollutants to surface waters. These will continue to be our main tools to control toxic pollutants. However, the discharge of certain highly toxic and bioaccumulative pollutants can create serious environmental and human health problems.

Some pollutants are extremely harmful quantities or may build up in the food chain to produce adverse, long-term effects on human health and the living ecological resources. Some pollutants can be linked not only to cancer, but also to neurological disorders, and reproductive, developmental and immunological impacts. Such pollutants can damage aquatic ecosystems directly by eliminating populations of sensitive species or indirectly by causing increased incidence of disease in the remaining species. Some pollutants may persist in the environment for decades, posing a continuing threat to humans, aquatic organisms, birds and other wildlife.

Section 307(a)(2) now authorizes EPA to issue an "effluent standard" (which may include a prohibition) establishing requirements for toxic pollutants. However, the statute provides an unusually burdensome rulemaking process for setting these standards, a process that is far more costly and difficult than the Administrative Procedure Act requirements that govern most of the Federal government's rulemaking. Not surprisingly, this cumbersome process has rarely been used. It was used most recently in 1977 when EPA published effluent standards for aldrin/dieldrin, DDT, DDD and DDE, endrin, toxaphene, benzidine and polychlorinated biphenyls.

We support a change to the CWA to improve EPA's ability to restrict or prohibit the discharge of the most highly toxic and bioaccumulative pollutants, where appropriate. The Senate bill recognizes the need for this change. Some pollutants are so harmful to the environment or human health that the best approach is to further restrict or prohibit their discharge entirely. If EPA's Administrator makes this discretionary determination, there should be a fair but reasonably expeditious procedure available to assure timely implementation.

We believe that it is important to preserve the Administrator's discretion in determining whether to restrict or ban the very worst toxic pollutants. The Administrator should be able to consider many different factors including: (1) the pollutant's persistence, toxicity, and bioaccumulation potential; (2) the magnitude and extent of exposure to the pollutant; (3) the relative contribution of point source discharges to the overall risk; (4) the availability of and risk posed by substitute chemicals or processes; (5) the beneficial and adverse social and economic effects of any effluent standard, including the impact on energy resources; (6) the extent to which effective control is being or may be achieved in an expeditious manner under other regulatory authorities; and (7) other factors that Administrator deems appropriate.

CONCLUSION

Reauthorization comes at a critical stage in the evolution of the water program. We need to improve our programs and move them forward without destroying the basic structure that allows the CWA work well. Improvements are needed in technology-based effluent guidelines to cover conventional, nonconventional and toxic pollutants, as well as to integrate the pollution prevention ethic. The pretreatment

program needs some adjustments, but only where we can strengthen the ability of local communities to carry on their control efforts. The scope and timeliness of State water quality standards can be improved as we move beyond the chemical-specific focus on toxic pollutant controls and on toward protecting the biological and physical integrity of our waters. Detailed, prescriptive requirements could hamper the Nation's efforts to address the highest priority risks to watershed and human health protection, and inhibit our ability to rely on the collective experience of our State, Tribal, local, Federal and public partners in devising creative solutions to those risks.

We look forward to continuing to work with the Committee as we jointly tackle these difficult and important challenges.

WRITTEN STATEMENT OF JOHN STEIN, THE NATIONAL ENVIRONMENTAL DEVELOPMENT ASSOCIATION

INTRODUCTION AND SUMMARY

The National Environmental Development Association's Clean Water Project is pleased to offer its views to the Subcommittee on Clean Water, Fisheries and Wildlife on issues in the reauthorization of the Clean Water Act. The National Environmental Development Association is a diverse coalition of companies united in the belief that it is possible to have both economic growth and a clean environment. It is in that spirit that we present our suggestions for improving the Clean Water Act to make it more effective and less costly.

The NEDA Clean Water Project believes that the Clean Water Act has induced remarkable progress in improving the nation's water quality over the last two decades. The major remaining sources of water pollutants are non-point sources and the last unregulated industrial discharges that do not have federally established categorical standards. Both of these are very site specific and neither is very amenable to controls through the broad-based technology standards that form the foundation of the current law.

The NEDA/Water Project agrees with the conclusion that many others have come to—that a watershed management approach is the most effective way to address the remaining pollutant loadings to water. Such an area wide approach also makes the application of free market approaches to pollution control more feasible.

In reauthorizing the Clean Water Act, Congress should take care to make the Act more flexible, not more restrictive. Unfortunately, S. 1114 grants unparalleled power to the Environmental Protection Agency to regulate all phases of product manufacturing, distribution, use and disposal under the guise of protecting the nation's water resources.

The NEDA Clean Water Project believes that such an approach is mistaken, and would be doomed to failure if attempted. Such centralized decision making has produced both lower living standards and lower levels of environmental protection where it has been tried in Eastern Europe and the former Soviet Union.

On the other hand, individual initiative undertaken by knowledgeable experts at each facility, or in management for a particular watershed area, can produce water quality improvements at the least cost to society. An institutional framework incorporating flexibility and market based incentives is needed to allow such initiative to be undertaken and rewarded. The use of tradable effluent rights within a watershed is an approach that offers the chance to achieve the nations clean water goals at the least cost to society.

Likewise, Congress should not prohibit the use or release of substances without carefully considering the consequences of its actions. The decision should consider the economic impact of such an action, and the technical feasibility of achieving "zero discharge", along with the environmental effects of such imposing such restrictions.

In addition, Congress should not modify existing relationships between companies and publicly owned treatment works (POTWs) without carefully considering the consequences of its action. The present system is working well, and local authorities should retain the authority to determine the proper restrictions on discharges to POTWs. Mechanisms are already in place to ensure that such discharges do not harm either the POTWs or the environment.

The NEDA Clean Water Project also believes that where the federal government imposes mandates upon state and local governments, it should also provide financial support to carry out those mandates. Congress should continue or expand the state revolving funds or reinstate grant programs and fund them at a level sufficient to ensure that state and local governments can carry out the programs.

In enforcement areas, the NEDA Clean Water Project believes that citizens should not be given the right to sue companies for violations that occurred entirely in the past. Such actions are punitive—they do not improve present compliance or deter future violations—and should be the prerogative of governments. The government should preserve its authority over such actions to ensure that all societal goals are considered in deciding to pursue any punitive action.

Finally, in reauthorizing the Clean Water Act, the Congress should ensure that requirements are both economically and technically achievable.

MARKET BASED APPROACHES

Market based approaches to environmental protection offer a way to improve the quality of the nation's water resources while ensuring that the goal is reached in the most cost effective manner. In particular, provisions for the trading of effluents in individual watersheds should be explicitly added to the Clean Water Act. Trading makes it possible for those who can most easily reduce loadings to bear the cost of doing so, thereby achieving water quality goals at the least cost to society. Moreover, a market approach offers the opportunity to move more quickly and innovatively to achieve the nation's water quality goals.

A watershed management system offers an ideal environment in which to conduct trading. Trades should be restricted to a single watershed to ensure that the trading system can be defined and controlled, and that the results can be measured. In this fashion, we can ensure that the program provides real benefits, and does not create additional environmental problems.

Trading should be allowable between point sources, between non-point sources, and also between point sources and non-point sources. Trades among similar types of loadings, trading oil and grease for oil and grease for instance, or trades involving similar types of health or environmental concerns, e.g., trading chemical oxygen demand for biological oxygen demand or carcinogens for carcinogens, do not pose any conceptual problems. Exchanging effluents in these circumstances should be permitted as a matter of routine.

Trading in toxics is controversial, but should be allowed for the same reason that trading in other loadings is allowed—it provides a mechanism for water quality goals to be met at the least cost. Exchanges could be based on relative toxicity, no observed effect concentrations (NOECs) for instance, and volumes. Trading in all loadings should only be limited if it is necessary to prevent "hot spots" which might exceed water quality standards.

Trading in dissimilar substances, e.g., between suspended solids, oil and grease, toxics, etc., presents some difficulties. No valid scientific foundation exists for making comparisons among these substances, or for deciding that watershed loading from one is more or less harmful than loading from another. Even so, the concept should not be dismissed out of hand. Situations may arise where the net benefit is obvious. For instance, it may be beneficial for a watershed to trade a very large reduction in oil and grease for a relatively small increase in toxics. We suggest that the concept be left open for future exploration.

In a tradable permit system, companies should be able to use trading to meet BAT requirements. In addition, indirect dischargers connected to the same publicly owned treatment works should be able to trade their effluents, in coordination with the POTW, to achieve a least cost solution without adding loadings to the POTW. Language should be inserted into the act to encourage POTWs to accept such exchanges rather than relying solely on categorical standards, again with routine variances granted so that POTWs do not have to enforce these standards. In all situations, the anti-backsliding provisions of the Clean Water Act would have to be clarified to ensure that facilities buying the ability to discharge more effluents do not face a legal impediment which calls the entire process into question.

Operating this type of a trading system requires both a clearinghouse for exchanges of effluent permits, and an accurate characterization and model of loadings for each watershed. The characterization and model are necessary to identify loadings and their sources so that anticipated changes as a result of trades will reflect reality. A trading model must account for the potential for modifying loadings from various point and non-point sources. EPA, the U.S. Geological Survey, the Corps of Engineers and other government agencies should be required in the reauthorized Clean Water Act to develop these watershed models and databases in conjunction with the cities, farms and industries that will be affected by them.

A clearinghouse for trades would be responsible for making a market in effluents. While commodities markets will perform this function for sulfur dioxide under the clean air act, this approach does not seem feasible under a watershed management

system. The modeling exercise necessary to ensure accuracy in equivalent loadings seems beyond the scope of commodities exchanges at this point.

Instead, the experience in trading air emissions in southern California could serve as a useful model for trading in a watershed. Like a watershed, southern California is a discrete area with unique characteristics for air. Firms in the airshed were assigned an emission baseline, and could then buy permits from others to exceed that baseline or sell permits to others by doing better than its baseline. Trades are cleared through a government control agency which ensures that over-all air quality goals are met. This concept could be expanded to include a futures market so that companies deciding to improve their pollution control and sell their permits can be sure that the market will reward their investment. Such a clearinghouse should be established as part of the Act.

Importantly, a watershed trading system should be set up to minimize constraints on exchanges. Excessive cost, paperwork, delays or other transaction costs detract from the value of trading. Ultimately, such transaction costs could make trading unattractive, as they have in some areas, and the country would be denied the benefit of using an economically efficient method of achieving environmental goals. A reauthorization bill should make it clear that the object of a trading system is to minimize the cost of achieving environmental goals, and should place the burden of proof on the controlling agency that its requirements are essential. Notification to EPA or state authorities, with adequate time for review, should be sufficient to allow a trade, provided that the agencies raise no objection to it.

TOXIC USE REDUCTION

EPA is currently required to establish effluent guidelines for industry that reflects the best available technology. Where the best available technology is not sufficient to protect water quality, water quality-based limitations are imposed on dischargers.

S. 1114 adds an additional factor to the determination of BAT: toxic use reduction. The proposal places EPA in the position of making decisions regarding production processes in the guise of protecting water quality. Production decisions should be made by experts—private business—not by the government. Production processes and raw materials are the heart of business decision making, and opportunities for manufacturing flexibility and innovative environmental solutions must be encouraged, not restricted.

The government should not dictate business decisions ranging from the extraction and use of raw materials to the design of finished products. Such authority has great implications for the growth and international competitiveness of the United States economy, and should not be granted. Full consideration of the possible effects of such great government control over product decisions will reveal the danger of this action.

Current law provides sufficient authority to establish best available technology standards, and more stringent water quality standards. These should be continued along with market based approaches to provide the maximum opportunity for innovation and manufacturing flexibility to achieve water quality goals.

TOXIC POLLUTION CONTROL

Limitations on releases in the current law are balanced between the desire for a pristine environment and other goals of society.

Banning the discharge of specific chemicals, as has been proposed, does not consider the tradeoff between the value of a substance to the country and the impact of possibly removing it from use. While it may sometimes be technically feasible to eliminate the discharge of a substance, it may be prohibitively expensive to do so.

Thus, the economy may be deprived of an important ingredient, or that ingredient may become much more expensive, for little or no environmental improvement.

In deciding the allowable level of substances in a facility's effluent, the EPA should balance the impact of limiting the discharge with the technical feasibility of control and the environmental effects of the effluent.

Congress should not ban the discharge of any substance without balancing the environmental risks to be lessened against the benefits of that substance for both producers and consumers and the costs involved in removing it from the environment. The law should ensure that the nation will gain from requirements that are imposed.

PRETREATMENT

Substantial controls have been placed on indirect dischargers to prevent upsets to municipal treatment plants, or the pass through of untreated pollutants into receiv-

ing waters. This effective control system consists of federal pretreatment, effluent guidelines, and general pretreatment regulations, state indirect discharge programs, and local pretreatment programs and ordinances. The system is working well, and the disruption of municipal treatment plants by industrial discharges is almost nonexistent.

Municipal treatment works are often designed to accept local industrial effluent, and funded by charges placed on local industry. Such arrangements lower the cost of achieving water quality goals, and provide a strong customer base for the POTW. Where specific industrial effluents would interfere with a POTW's operation, pretreatment agreements mandate that the discharging facility treat those effluents to prevent environmental damage.

Prohibiting or restricting industrial effluents from being treated in POTWs would result in a squandering of existing investment in treatment works. It would force companies to build treatment facilities that duplicate the capacity of an existing facility, which could no longer be used. New treatment capacity would not be built as economically as the existing system. Companies would no longer be able to use existing capacity. Instead, they would be required to build a larger number of smaller facilities, with a corresponding loss of economic efficiency. Companies required to build treatment works would likely become direct dischargers regulated by NPDES permits rather than pay POTWs for duplicate treatment costs, which would also increase the government's expense for program management.

The POTWs would also lose. They were built and financed on the expectation that their industrial customer base would provide the revenue to repay their cost. With that customer base significantly reduced, many POTWs may find themselves in great financial difficulty.

The existing system of treating industrial wastes at POTWs is working well, and there is no need for a radical change.

Congress should not restrict the right of a discharger and a POTW to agree on a mutually beneficial way to achieve standards. Local authorities should retain the authority to determine the proper restrictions on discharges to POTWs. Mechanisms are already in place to ensure that such discharges do not harm either the POTWs or the environment.

FEDERAL FINANCIAL SUPPORT

The federal government should provide financial support at the state and local level for programs that it mandates. Congress originally established a construction grants program to help fund wastewater treatment plants required by the Clean Water Act. This program was later replaced by a state revolving fund program.

At that time, Congress authorized \$18 billion for the SRF, but has appropriated significantly less. The shortfall will amount to about \$2 billion by 1994.

In the meantime, new mandates have been increasing the cost of water programs. New water quality standards and treatment requirements combined with development pressures and economic growth have increased costs well beyond those foreseen during the last reauthorization of the Clean Water Act.

In addition, pollution prevention programs, stormwater and non-point sources controls, upgrades of many small treatment plants to meet more stringent standards, and additional legislative mandates have sent costs skyrocketing.

According to the Association of State and Interstate Water Pollution Control Administrators, over \$137 billion will be necessary through the year 2010 to meet the nation's need for water quality infrastructure. The Clean Water Council estimates that needs could amount to as much as \$167 billion through the year 2000.

Clearly, states and local communities do not have the resources to meet such expenditures. Attempting to place such costs on local governments will virtually guarantee that the nation's water quality goals will not be met.

The federal government should continue the SRF or reinstate grant programs and fund them at a level sufficient to ensure that state and local governments can carry out the mandates imposed by government.

ENFORCEMENT

Citizens should not be given the right to sue for violations that occurred in the past. Such authority would eliminate the distinction between citizen and government action to punish past transgressions. Eliminating that distinction carries a danger in that individual citizens are not bound by the government's need to pursue many public policy objectives. Citizens may ignore their effect on other societal objectives in the single-minded pursuit of one goal, and without the government's constraint of public accountability.

Such actions are entirely punitive—they do not improve present compliance or deter future violations—and are the prerogative of governments. The government should preserve its authority over such actions to ensure that all societal goals are considered in deciding to pursue any punitive action.

Moreover, natural resource damages should not be made a part of CWA enforcement. Environmental remediation is already a part of other laws. CWA enforcement should contain penalties appropriate to the degree of any violation and should be sufficient to be a deterrent to future violations. The separation between improvement projects and fines should continue to be maintained.

PERMIT REQUIREMENTS

In developing standards for best available technologies, EPA now considers a number of factors including the cost of control and the effectiveness of the control in improving water quality. In mandating a fishable and swimmable designation "where attainable", Congress has recognized the practical difficulties of reaching that goal.

In legislating water quality goals, Congress should consider the technical and economic feasibility of achieving those goals.

TESTIMONY OF CAROLYN HARTMANN, STAFF ATTORNEY, U.S. PUBLIC INTEREST RESEARCH GROUP

INTRODUCTION

Chairman Graham and members of the Senate Subcommittee on Clean Water, Fisheries, and Wildlife of the Senate Committee on Environment and Public Works, my name is Carolyn Hartmann and I am a staff attorney with the U.S. Public Interest Research Group. PIRGs are nonpartisan, nonprofit environmental and consumer advocacy organizations with over 1 million members nationwide. U.S. PIRG is the national lobbying office for PIRGs in over 30 states. PIRGs have been fighting to clean up our nation's waterways for over 20 years.

I would like to thank you for the opportunity to testify today on pollution prevention opportunities in the Clean Water Act and to provide specific comments on the pollution prevention strategies contained in the "Clean Water Pollution Prevention and Control Act of 1993" (S. 1114), introduced by Senators Max Baucus and John Chafee.

My testimony focuses in on four key sections of S. 1114:

- Sec. 201. Point Source and Technology Based Controls;
- Sec. 203. Toxic Pollutant Phase-Out;
- Sec. 205. Pollution Prevention Planning; and
- Sec. 601. Technology Development.

In addition, U.S. PIRG has reviewed the testimony presented by Jessica Landman on behalf of the Natural Resources Defense Council and Manik Roy on behalf of the Environmental Defense Fund and generally supports the positions taken and recommendations made by their organizations.

POINT SOURCE AND TECHNOLOGY BASED CONTROLS

Current point source and technology based controls in the Clean Water Act continue to focus on single-media solutions to the toxics problem. This single-media focus allows and even encourages industries to shift toxics from waterways to other environmental media such as air or land.

COMMENTS ON THE CLEAN WATER POLLUTION AND PREVENTION AND CONTROL ACT OF 1993—SECTION 201. POINT SOURCE AND TECHNOLOGY BASED CONTROLS

We strongly support provisions contained in section 201 of S. 1114 that revise sections 304, 306, and 307 of the Clean Water Act to make clear that standards shall take into consideration pollution prevention options and change the focus of standards to prevent media shifting. These amendments are an essential step for ensuring that reduced toxic discharges are not creating new environmental problems.

TOXIC POLLUTANT PHASE-OUT

THE PROBLEM

The Clean Water Act is based on the assumption that our waterways can absorb a certain amount of toxic materials. For certain toxic substances that persist and/or bioaccumulate in the environment, this assumption simply does not hold true. These substances are extremely resistant to natural degradation processes. They have the

potential to cause great harm, including birth defects, learning and behavior disorders, reproductive failures, immune system failures, and cancer, in very small quantities. They are not prone to traditional end-of-pipe regulation.

These substances in our waterways increase health risks to humans and other animals that eat contaminated fish and shellfish.

FINDINGS OF THE INTERNATIONAL JOINT COMMISSION ON GREAT LAKES WATER QUALITY

The International Joint Commissions' Sixth Biennial Report on Great Lakes Water Quality concludes that "persistent toxic substances are too dangerous to the biosphere and to humans to permit their release in any quantity." The Commission recognizes the following:

It can never be said that we can totally halt the input of persistent toxic substances into the system, or totally eliminate them. But humans can control what they do, so we can say that there should be—and shall be—zero discharge, or input, of persistent toxic substances as a result of human activities. Seen in this light, the Commission believes that virtual elimination is the necessary and reasonable goal, and zero discharge, or nil human input, is the necessary and not unreasonable tactic for achievement of the virtual elimination strategy.

Finally, the International Joint Commissions describes "zero discharge" in the following manner:

Zero discharge means just that: halting all inputs from all human sources and pathways to prevent any opportunity for persistent toxic substances to enter the environment as a result of human activity . . . Thus, zero discharge does not mean less than detectable. It also does not mean the use of controls based on best available technology, best management practices, or similar means of treatment that continue to allow the release of some residual chemicals.

THE EFFECTS OF TOXIC PERSISTENT AND/OR BIOACCUMULATIVE CHEMICALS ON THE ENDOCRINE, IMMUNE AND NERVOUS SYSTEMS.

Several months ago, Dr. Theo Colburn testified before the Senate Environment and Public Works Committee on the effects of synthetic chemicals on the endocrine, immune and nervous systems of wildlife and humans.¹ Dr. Colburn's testimony talked about conclusions reached by twenty-one experts who focused on the problems of maternal transfer of toxic chemicals to offspring. These experts reached some startling conclusions. These scientists stated with certainty that:

"A large number of man-made chemicals that have been released into the environment . . . have the potential to disrupt the endocrine systems of animals, including humans.

They proceeded to estimate with confidence that:

"Some of the developmental impairments reported in humans today are seen in adult offspring of parents exposed to synthetic hormone disrupters released in the environment."

And "unless the environmental load of synthetic hormone disrupters is abated and controlled, large scale dysfunction at the population level is possible."

Many of the substances Dr. Colburn's colleagues have studied are toxic and persist and/or bioaccumulate in the environment.²

COMMENTS ON THE CLEAN WATER POLLUTION AND PREVENTION AND CONTROL ACT OF 1993—SECTION 203. TOXIC POLLUTANT PHASE-OUT

Although we are pleased that Section 203 of S. 1114 recognizes that there are certain toxic substances that need special attention, we are very concerned that this section will not achieve necessary reductions in the use of toxic substances that persist and/or bioaccumulate in the environment. In addition, because this section fails to take a multi-media approach to the problem, and only focuses on discharges to waterways, it may even create new environmental problems.

Section 203 limits the Administrator's authority to take action "prohibiting the discharge of any toxic pollutant listed pursuant to paragraph (4)." By limiting the Administrator's authority to prohibiting "discharges" only, S. 1114 allows facilities to shift their toxics from the waterways to other environmental media. This is entirely contrary to the goals of pollution prevention.

Section 203 only allows the Administrator to list those pollutants that the Administrator determines to be "highly toxic or toxic and highly bioaccumulative; and occur in surface water predominately as a result of discharges." Some major sources of highly toxic pollution are non-point sources, including polluted runoff from agri-

culture. Other sources of pollution do not discharge to waterways but cause severe water problems nonetheless, such as mercury emissions from power plants or incinerators. Over half of the states have issued fish consumption advisories due to mercury contamination.³

In addition to focusing on toxic substances that bioaccumulate, S. 1114 should target persistent toxic substances for phase-outs. Persistent toxics are those substances that are poisonous in infinitesimally small quantities and remain in the environment for long periods of time. The current National Pollutant Discharge Elimination System (NPDES) assumes that our waterways' can absorb a certain amount of the toxic substances being discharged. Because persistent toxic substances do not easily breakdown in the environment, this assumption does not hold true.

We strongly support the requirement that the Administrator submit to Congress a report on the developmental effects of pollutants found in our waterways. This report should build upon the work already compiled by Dr. Theo Colburn and his colleagues, and will be critical to our understanding of the effects of persistent toxics and the steps necessary to protect future generations.

Recommendations for Phase-out

We urge the Committee to take an approach to toxic substances that persist and/or bioaccumulate in the environment which goes beyond focusing solely on discharges. We urge the Committee to set up a multi-step process which will identify highly toxic persistent and/or bioaccumulative substances that result in pollution of our waterways and establish a program designed to phase-out or "sunset" either the production or use of these substances over time and replace them with safer substitutes. We recommend that this process examine changes in production processes and products that eliminate toxic pollution to waters and other environmental media from these substances and their byproducts.

This goal might best be achieved if approached in three steps.

1. Phase Out the Use of Chlorine in the Pulp and Paper Industry.

Modern pulp and production technology creates some of the most toxic effluent that any industry can produce. Even with recent technology advances and reductions in the dioxins discharged to waterways, these persistent toxics continue to be discharged. As discussed above, because these toxics persist in the environment, we recommend a strategy which shifts the focus toward eliminating the use of chlorine compounds which cause the formation of persistent toxic byproducts rather than continual efforts to control these byproducts at the end of the pipe.

Safer alternatives to chlorine use in the pulp and paper industry do exist and mills in this country and abroad have begun to make the switch to these safer alternatives.

In the late 1980's, European papermakers were coming on-line with alternatives, chlorine-free technologies for producing high-quality paper without polluting their already overloaded ecosystems. They were spurred by aggressive regulatory systems in their countries. In the United States, papermakers were denying that a problem existed. In 1992, the International Joint Commission recommended that chlorine use be eliminated not only from the pulp and paper industry but from Great Lakes industries altogether.

Canadian regulators have begun to respond to the message as well. The provinces of British Columbia and Ontario (the two largest paper producing regions in North America) have now adopted rules to end the use of chlorine by the paper industry by 2002.

In the United States, Louisiana-Pacific's Samoa, California mill is already producing 250 tons of "totally chlorine free" (TCF) paper per day and will have converted the other 750 tons per day by 1995. Louisiana-Pacific has joined the environmental community in urging the EPA to call for procurement of chlorine-free paper by the federal government.

Other facilities making commitments to move to TCF paper production include Lyons Falls in Lyons Falls, New York; Georgia-Pacific in Bellingham, Washington; Mohawk Paper in Mohawk, New York and Cross Point in Miami, Ohio. Unfortunately, some of the companies, including Georgia-Pacific continue to use chlorine at other mills around the country.

There are benefits to weaning this industry from chlorine use that go beyond the environmental benefits. As long as a pulp mill uses chlorine, it has to dump its process water, because attempts at recycling would cause corrosion of mill equipment. Chlorine Free mills that are closing the loop on their processes are reducing their water use by approximately 80 percent. If the pulp and paper industry had been

chlorine free by 1991 the chlorine industry would have saved over 94 billion gallons of water in 1991 alone.⁴

If pulp mills close the loop, they can recover and reuse a majority of their processing materials. Industry analysts estimate that chlorine-free closed loop mills can produce paper products for 30 percent less than their chlorinated counterparts.⁵

The production of chlorine is an energy-intensive industrial process. By eliminating the demand for huge amounts of chlorine by the paper industry, we will save energy. If U.S. pulp and paper industries had shifted to non-chlorine alternatives, we would have saved an estimated 4.2 billion kilowatt hours of energy in 1992 alone.⁶

Whether or not one agrees that the use of chlorine in the paper industry is bad for the environment, the plain fact is that the world market is demanding totally chlorine free paper. The U.S. and Canada will always be the major paper producing countries, but each year control of the intellectual property of papermaking—designs, patents, royalties—worth millions of dollars, and the key to competition in the next century are being lost to European companies.

We urge the Committee to adopt the approach taken by Rep. Bill Richardson in legislation last Congress (H.R. 4949). Rep. Richardson will reintroduce legislation calling for a chlorine-free paper industry.

2. Expand the Phase-Out Process to a List of "Sunset Candidates."

The Clean Water Act should set forth a list of substances which presumptively qualify as "sunset candidates."⁷ Substantial work has been done in the Great Lakes and in other countries focusing on a relatively short list of substances that are toxic and persistent and/or bioaccumulative. We would like to work with the Committee and its staff to develop a list of substances that are appropriate initial sunset candidates. Attached as Appendix I are various lists targeted for sunset and a list of substances we recommend be used to begin the process.

We recommend that EPA set up a two stage process for dealing with these substances.

First, a "Sunset Chemical Board" should be established by the Environmental Protection Agency to determine which, if any, of the sunset candidates ought to be removed from the list by reason of inadequate scientific justification to warrant sunset. The Board would be empowered to recommend that specific uses, rather than all uses or production, be prohibited for a given substance.

We recommend that the Board be composed of multidisciplinary representatives from the EPA, National Institute for Occupational Safety and Health, National Institute of Environmental Health Sciences, U.S. Fish and Wildlife Service, National Marine Fisheries Service and International Joint Commission who are experts in toxicology, epidemiology, endocrinology, immunology, reproductive physiology, wildlife biology and other fields, as well as citizen organizations with relevant expertise. The Board should consider the substances' toxicity, potential to bioaccumulate, persistence or half life, and the amount of the chemical produced and released.

Congress must set forth a timetable to prevent endless delay. We recommend that the maximum timetable for the sunset of a candidate be eight years after enactment, with a proviso that the Administrator may extend the deadline by one year if a proponent demonstrates that the use (as well as discharge) of a sunset candidate can be eliminated if this additional time is allowed. A provision that addresses essential uses, for example medical uses, is needed as well.

Second, the Clean Water Act should direct the Administrator to establish a second committee or group of committees to recommend timetables and methods for phase-outs of chemicals on the finalized sunset candidate list, and to confer with the EPA on potential safe substitutes and alternative manufacturing processes available to facilitate phase-outs.

These committees should be made up of stakeholders, including individuals who use the sunset candidates and produce their potential safer alternatives and/or safer alternative production processes, and members of interested federal and state agencies, labor, and the environmental community. These committees would provide the EPA Administrator with final recommendations for phase-out timetables for the final sunset candidate list.

3. Establish a Longer Term Process for Identifying Classes of Chemicals for Phase Out.

In the instances where Congress has taken action to mandate reductions in the use of certain substances, it has often been too little, too late, as in the case of DDT and PCBs. Even though uses of these substances have largely been eliminated, we continue to live with their effects.

Attempting to approach the problem of long-term toxic contamination one chemical at a time can provide us with models for making safer production processes and products, but it will not solve our most severe toxic problems in the long-run.

The "one-chemical-at-a-time approach" generally fails to address the problems of unintentional byproducts of certain production processes. For example, dioxins are the byproduct of numerous different production processes. The "list approach" also generally fails to address the safety of alternatives. This approach often leaves companies searching for an alternative chemical to drop into place as a substitute for the listed chemical. The best alternative is often a change in the production process that eliminates the need for that step in the process.

We must begin to address entire classes of chemicals where that class exhibits similar troubling characteristics. The assumption has been that chemicals are "innocent until proven guilty." The burden has been on the public and government to prove that each individual substance causes significant harm rather than on the manufacturer to prove that it does not. This is not the approach we take with drugs and this should not be the approach we take for chemicals. Drug manufacturers are required to prove that the drugs they manufacture are safe and effective before they are placed on the market.

We must begin to apply the same tests to chemicals and reverse the burden of proof. This is especially true for certain classes of chemicals of concern.

The International Joint Commission has recently begun to focus their attention on organochlorines as a class of chemicals of concern. Organochlorines are defined as those compounds in which chlorine is bound to carbon-based organic substances. Organochlorines are produced intentionally as thousands of chemical products such as pesticides, plastics and industrial solvents. They are also produced as thousands of unintentional byproducts of industrial processes that use chlorine or other organochlorines such as in pulp bleaching, waste incineration or chemical manufacturing.

Based on the recommendations of the International Joint Commission's Science Advisory Board and their own deliberations, the International Joint Commission recommended in their Sixth Biennial report that "it is prudent, sensible, and necessary to treat [organochlorines] as a class rather than as a series of isolated individual chemicals." Because chlorine is the common precursor in the diverse set of industrial processes that produce this class of substances, the International Joint Commission concluded that "the use of chlorine and its compounds should be avoided in the manufacturing process." Specifically, the Commission recommended the following:

"... that the Parties, in consultation with industry and other affected industries, develop timetables to sunset the use of chlorine and chlorine-containing compounds as industrial feedstocks and that the means of reducing or eliminating other uses be examined."

Other classes of concern include organohalogens, and heavy metals.

We urge the Committee and the Congress to adopt the recommendations made by the International Joint Commission in their Sixth Biennial Report on Great Lakes Water Quality and apply those recommendations to the nation as a whole. I have supplied a copy of this report to the Subcommittee which I request be included in the record of this hearing.

Like the International Joint Commission, we recognize that the recommendation that Congress begin to develop timetables to sunset classes of substances, including organochlorines, is not a simple task. It will involve many industrial processes and some non-industrial ones as well. It may take many years, but the size of the task must not paralyze us.

The reauthorization of the Clean Water Act provides an opportunity to take several key steps toward tackling this problem. In addition to acting on the use of chlorine in the pulp and paper industry and some other key "sunset candidates," we recommend that the Committee direct the EPA and other appropriate agencies to complete a report to Congress with the following items of information:

All of the manufacturers of organochlorines that persist in the environment, the quantities of each of these substances produced annually, and the location of the facilities that produce these substances.

All of the industry sectors using organochlorines that persist in the environment, the purpose of this use, the quantities used annually and the location of the facilities using these substances.

All of the production processes that produce persistent toxic byproducts, including but not limited to dioxins, and the estimated quantities of these byproducts produced by each industry sector.

All currently and potentially available alternatives, including a review of safer alternatives, alternative processes, products or raw materials.

A recommendation for the phase-out in the production and/or use of specific organochlorines.

Legislation soon to be introduced by Rep. Bill Richardson will direct the EPA to complete a similar report to Congress. We urge the Committee to follow Rep. Richardson's lead and include a similar provision in their amendments to the Clean Water Act.

POLLUTION PREVENTION PLANNING

THE PROBLEM:

OTA Findings—

In 1985, Congress' Office of Technology Assessment (OTA) estimated that industry could cut waste production in half in only 5 years by implementing source reduction and toxics use reduction modifications to their production processes.⁸ OTA has also estimated that industry could save \$50 for every \$1 spent by government on source reduction.

Despite these findings, little has been done at the national level to encourage companies to achieve these pollution prevention goals.

The Inform Reports—

In 1985, the nonprofit research organization, INFORM, released a study of chemical plants entitled *Cutting Chemical Wastes*.⁹ This report documented that all of the plants that had looked for ways to reduce waste through source reduction found such opportunities and realized considerable cost savings after relatively short payback periods.

Unfortunately, the majority of companies are not prepared to undertake toxics use reduction or source reduction because their environmental programs focus exclusively on complying with pollution control requirements rather than on preventing pollution.

According to the INFORM study, the most important factors limiting source reduction were not technological. Nor were they economic or the result of regulatory impediments. Instead, INFORM found that what most often inhibited source reduction were a variety of institutional factors such as:

- inertia/fear of change,
- a belief that the existing process and operations were already maximally efficient,
- lack of knowledge of the sources of wastes within the plant
- lack of a system to account the full dollar costs of ongoing waste generation going back to its source,
- the lack of a system of rewards or incentives that involve plant employees in finding source reduction opportunities, and
- no one at the plant was responsible for overseeing their implementation.

Last year, INFORM released an update to *Cutting Chemical Wastes*. This second report, entitled *Environmental Dividends: Cutting More Chemical Wastes*,¹⁰ found the following:

- One-quarter of the source reduction projects required no capital investment and just under half required investments of \$100,000 or less.
- Nearly two-thirds of the projects were completed in 6 months or less including research and development.
- Over 60 percent of the projects had payback periods of six months or less.

Despite these promising findings, INFORM also found that the prevailing corporate focus continues to be on traditional end-of-pipe controls for toxic pollution.

POLLUTION PREVENTION ACT DATA

The latest data from the U.S. Environmental Protection Agency's Toxics Release Inventory supports findings in the INFORM report that pollution prevention still has not found its way inside the gates of the majority of U.S. companies. The EPA data shows that although emissions of toxic chemicals are generally declining, the same downward trend may not apply to hazardous waste generation.

This year, for the first time, under the Pollution Prevention Act of 1990, manufacturing companies were required to project for 1992 and 1993 their estimated waste generation. This data suggests that waste generation will not decline and may even increase in the near future. The EPA referred to this as a "disturbing trend." This data indicates that although some companies may be reducing their toxic discharges

to water, many of them are merely shifting those toxics to other environmental media, or treating or recycling wastes, rather than preventing the pollution.

STATE POLLUTION PREVENTION ACTIONS

In 1989 the nation's first pollution prevention laws were signed in three states, Massachusetts, Oregon, and Illinois. In 1990, Indiana, Washington and Maine passed toxics use reduction oriented laws. In 1991, New Jersey became the seventh state to pass a toxics use reduction law. To date over two dozen states have passed some type of pollution prevention law.

The pollution prevention laws in Massachusetts, Oregon and New Jersey were the result of intensive negotiations between industry, government and environmentalists. *All parties endorsed these laws upon passage.*

When the Massachusetts Toxics Use Reduction law passed in 1989, the president of Associated Industries of Massachusetts, John Gould, said, "There's economic pragmatism here." These state programs serve as a basis upon which to build a national pollution prevention planning program.

COMMENTS ON THE CLEAN WATER POLLUTION AND PREVENTION AND CONTROL ACT OF 1993: SEC. 205. Pollution Prevention Planning.

We support many of the concepts contained in the Pollution Prevention Planning provisions of S. 1114. This section of the bill clearly emphasizes the need to encourage and help companies search for pollution prevention strategies as the preferred approach to addressing toxic water pollution. We strongly support the concept that a person must complete a pollution prevention plan as a condition of obtaining a permit under section 402 of the Clean Water Act. If companies are to be allowed to discharge toxics into our waters, it is entirely reasonable to require them to take steps to ensure that they have searched for ways to prevent those toxic discharges.

We are concerned, however, that the planning requirements, as currently written, will not provide companies with the guidance necessary to effectively evaluate the majority of pollution prevention options available and may needlessly tie up EPA resources.

S. 1114 provides little guidance to companies to help them develop meaningful pollution prevention plans and goals. The purpose of the planning process should be to help companies find ways to prevent pollution at the source. The planning requirements are not meant to make companies needlessly jump through meaningless hoops, but rather are designed to help companies learn the best pollution prevention options for their individual production processes. After completing each step in the planning process, companies should be able to determine the best prevention options for their processes.

S. 1114 requires that pollution prevention plans for the facility as a whole, rather than for specific production processes at the facility. By definition, pollution prevention takes place at the production process level. Facility-wide plans are not especially meaningful for the company, or for government or the public.

S. 1114 complicates the pollution prevention planning process by requiring EPA to develop a list of 20 pollutants for which the Administrator determines discharge reductions are likely to result in a benefit to human health or the environment and by then requiring the EPA to determine those facilities that release not less than 80 percent of the volume of the 20 chemicals to waterways. This is a labor intensive process that can be avoided.

There are provisions in the section 205 of S. 1114 that we do support. S. 1114 requires that plans stay on-site and be made available to the Administrator, State and local government agencies given authority by the State. We support this provision provided that plan summaries are made public. Plans are meant to help a company develop a pollution prevention strategy and are not meant to be public documents. We also support provisions in S. 1114 that make pollution prevention plan summaries available to the public. However, Congress should specify the contents of these summaries so that there will be some consistency between plan summaries. In addition, plan summaries should be made available to the public in a manner that provides greater access.

Pollution prevention planning is an approach that has been endorsed by a broad coalition of interests ranging from environmental groups to members of industry including the Chemical Manufacturers' Association in "Water Quality 2000." Unfortunately, the Pollution Prevention Planning requirements contained in S. 1114 are less comprehensive than the principals discussed in "Water Quality 2000."

RECOMMENDATIONS FOR POLLUTION PREVENTION PLANNING

We recommend that the Committee amend the planning requirements to provide greater direction for companies. Specifically, we recommend that plans include the following:

An inventory flow of the toxic materials and wastes through their production processes. This inventory is often referred to as an estimated "materials accounting." Companies can not develop pollution prevention plans if they do not know how chemicals flow through their production processes. EPA should provide companies with guidance on how to complete a materials accounting.

An estimate of the costs associated with the use of toxic chemicals or byproduct generation, including the cost of pollution control, waste management, employee protection, and insurance. Until companies have considered the costs associated with the use of toxic chemicals or generation of hazardous byproducts, companies are not in a position to make sound decisions about pollution prevention options.

An identification of pollution prevention options, assessment their technical and economic feasibility, selection of those appropriate for implementation and pollution prevention goals.

We recommend that plan summaries include, at a minimum, the pollution prevention options selected by the company and the pollution prevention goals. In addition, we recommend that plan summaries be collected by the EPA and be made available to the public through the computerized database established under the Emergency Planning and Community Right to know Act (EPCRA, also known as Title III of Superfund).

To simplify the process, we recommend that all facilities that meet the criteria for reporting under EPCRA and that apply for a permit under section 402 of the Clean Water Act complete a plan for all chemicals on the EPCRA section 313 list and for all Clean Water Priority pollutants.

EPCRA serves as a screen by targeting only facilities that manufacture, process or use large quantities of toxic chemicals and have more than 10 full time employees. In addition, the EPCRA section 313 list of chemicals is a well established list of chemicals. By building upon the highly successful EPCRA program, Congress will not waste valuable EPA resources.

The "Hazardous Pollution Prevention Planning Act" (S. 980), introduced by Senator Lieberman and cosponsored by Senators Moynihan, Jeffords, Lautenberg, Feingold, Metzenbaum and Wellstone provides a model for pollution prevention planning in the Clean Water Act. We urge the Committee to substitute a modified version of S. 980 for the pollution prevention planning requirements contained in S. 1114.

DEVELOPMENT OF CLEAN TECHNOLOGIES

As companies begin to make the shift toward preventing pollution and away from merely controlling pollution or shifting pollution from one area of the environment to another, it is essential that we develop additional mechanisms for promoting these efforts. Incentives for the development of clean technologies are an important part of the strategy.

COMMENTS ON THE CLEAN WATER POLLUTION AND PREVENTION AND CONTROL ACT OF 1993: SECTION 601. TECHNOLOGY DEVELOPMENT.

We support the inclusion of provisions in section 601 of S. 1114 that are designed to provide grants to help develop innovative water pollution prevention and practices. We urge the Committee to ensure, however, that prevention practices are given preference over control practices where feasible. The end-of-pipe pollution control sector of the environmental technology industry is very well established. The story is quite different for the pollution prevention sector. Without specific support for the pollution prevention technologies, less favorable pollution control technologies might inadvertently be given a competitive advantage over prevention.

RECOMMENDATIONS FOR TECHNOLOGY DEVELOPMENT

We urge the Committee to ensure that pollution prevention technologies are given preference over pollution control technologies where both options exist.

ENDNOTES

1. Testimony of Dr. Theo Colburn, Senior Fellow, W. Alton Jones Foundation and World Wildlife Fund before the Senate Committee on Environment and Public Works, March 24, 1993.

2. Chemicals known to disrupt the endocrine system include DDT, DEHP (di(2-ethylhexyl) phthalate), dicofol, HCB (hexachlorozene), kelthane, kepone, lindane and other hexachlorocyclohexane congeners, methoxychlor, octachlorostyrene, triasine herbicides, EBDC fungicides, certain PCB congeners, 2,3,7,8-TCDD and other dioxins, 2,3,7,8-TCDF and other furans, cadmium, lead, mercury, and tributyltin and other organo-tin compounds.

3. *Mercury Warning: The Fish You Catch May be Unsafe to Eat*, Clean Water Fund, authored by Hank Cole, Amy Hitchcock and Robert Collins, August 1992.

4. Figures compile by Mark Floegel from Greenpeace using Pulp and Paper International Magazine, July 1992.

5. "Technical and Economic Feasibility of the Effluent Free Bleached Craft Pulp Mill," Richard J. Albert, Technical Staff Manager, Parsons Main Inc., March 1993.

6. Figures compile by Mark Floegel of Greenpeace using data found in Eurochlor, Data Process Center Statistical Investigation: Chlorine Production, January 1993.

7. The term "sunset" as used herein is synonymous with phase-out and means the ban on the use and/or production of a chemical or product over a period of time. A phase-out can either be conditional or absolute.

8. *Serious Reduction of Hazardous Waste*, OTA, 1985.

9. *Cutting Chemical Wastes*, David Sarokin, Warren Muir, Catherine Miller, Sebastian Sperber, INFORM, 1985.

10. *Environmental Dividends: Cutting More Chemical Wastes*, authored by Mark Dorfman, Warren Muir, Catherine Miller, 381 Park Avenue South, New York, NY, 1992.

Candidate List for Phaseout

We propose the following list, which is a composite drawn from four lists of highly suspect substances already developed in other contexts:¹

LIST

alkylated lead	beta-hexachlorocyclohexane; beta-BHC
anthracene	delta-hexachlorocyclohexane; delta-BHC
arsenic	alpha-hexachlorocyclohexane (a-HCH)
benzo[a]pyrene	gamma-hexachlorocyclohexane (γ-HCH)
3,4-benzoflouranthene	technical-grade hexachlorocyclohexane
benzo[b]flouranthene	hexachlorophene
11,12-benzoflouranthene	Indeno[1,2,3-cd]pyrene
benzo[k]flouranthene	2,3-o-phenylene pyrene
benzo[ghi]perylene	lindane
1,12-benzoperylene	mercury
benzo[a]pyrene	4,4'-methylene bis(N,N'-dimethyl)aniline
3,4-benzopyrene	methylbenzene
benz[a]anthracene	methoxychlor
bis(2-ethylhexyl)phthalate	N-Nitroso-di-n-butylamine
4-bromophenyl phenyl ether	octachlorostyrene
4-chlorophenyl phenyl ether	perylene
danitol	pentachlorophenol
1,2,5,6-dibenzanthracene	pentachlorobenzene
dibenz[a,h]anthracene	phenanthrene
dibutyl phthalate	phenol
di-n-butyl phthalate	photomirex
1,4-dichlorobenzene	polychlorinated biphenyls (PCBs)
3,3'-dichlorobenzidine	polychlorinated dibenzo-p-dioxins and -furans (TCDD/Fs)
dicofof	1,2,3,4-tetrachlorobenzene
ethyl-p-nitrophenylphenylphosphorothioate (EPN)	1,2,4,5-tetrachlorobenzene
hexachlorobutadiene; hexachloro-1,3-butadiene	toluene
hexachlorocyclohexane; BHC	tributyl tin
alpha-hexachlorocyclohexane; alpha-BHC	1,2,4-trichlorobenzene

¹ Here are the four lists from which the above composite was developed:

1. Candidate Substances List for Bans or Phase-Outs, April 1992, prepared by Hazardous Contaminants Branch and Water Resources Branch, Ontario Ministry of the Environment. Primary list of 21 considered inherently hazardous due to their persistence in water or sediment, potential to bioaccumulate and toxicity.

2. Great Lakes Water Quality Initiative, "Pollutants of Initial Focus in the Great Lakes Water Quality Initiative," 58 Fed. Reg. 20801, 2100015 (April 16, 1993). Listed above are those known to be bioaccumulative chemicals of concern and those that are potential bioaccumulative chemicals of concern.

3. U.S. EPA "Chemicals of Highest Concern" list. From 1991 EPA draft document called "Assessment and Control of Bioconcentratable Contaminants in Surface Waters." List of 33, including 17 pesticides, 7 PCB mixtures and 9 other organics, which pose serious risks to human health due to high toxicity and high bioconcentration potential. These substances bioconcentrate in fish and shellfish to levels hazardous to human health, even when present in ambient water at very low concentrations. However, EPA did not use any specific criteria for defining "high bioaccumulation" or "high toxicity."

4. International Joint Commission: Water Quality Board List of Critical Water Pollutants.

SWEDISH LIST OF CHEMICALS TARGETED FOR PHASE-OUT

1. Arsenic
 2. Brominated Flame Retardants
 3. Cadmium
 4. Chloroparaffins
 5. Creosote
 6. Lead
 7. Mercury
 8. Methylene Chloride
 9. Nonyl-phenol Ethoxylates
 10. Organotin Compounds
 11. Phthalates
 12. Tetrachloroethylene (perchloroethylene)
 13. Trichloroethylene
-

**ONTARIO MINISTRY OF ENVIRONMENT'S CANDIDATE
SUBSTANCES PRIMARY LIST FOR BANS OR PHASE-OUTS**

- | | |
|---------------------------------|--|
| 1. Anthracene | |
| 2. Arsenic | 13. Mercury |
| 3. Benzo(a)pyrene | 14. Mirex |
| 4. Benzo(ghi)perylene | 15. Pentachlorophenol |
| 5. Benzo(a)anthracene | 16. Perylene |
| 6. DDT (and DDD and DDE) | 17. Phenanthrene |
| 7. 1,4-Dichlorobenzene | 18. Polychlorinated Biphenyls (PCBs) |
| 8. 3,3'-Dichlorobenzidine | 19. Polychlorinated Dibenzo-p-dioxins and
-furans (PCDD/Fs) |
| 9. Dieldrin | 20. Toxaphene |
| 10. Hexachlorobenzene | 21. Tributyl Tin |
| 11. alpha-Hexachlorocyclohexane | |
| 12. gamma-Hexachlorocyclohexane | |
-

**CHEMICALS TARGETED FOR VIRTUAL ELIMINATION:
INTERNATIONAL JOINT COMMISSION**

1. Benzo(a)pyrene
 2. DDT and metabolites (DDE and DDD)
 3. Dieldrin
 4. Hexachlorobenzene
 5. Lead, Alkylated
 6. Mercury
 7. Mirex
 8. Polychlorinated Biphenyls (PCBs)
 9. 2,3,7,8-TCDD (dioxins)
 10. 2,3,7,8-TCDF (furans)
 11. Toxaphene
-

**ONTARIO MINISTRY OF ENVIRONMENT'S CANDIDATE
SUBSTANCES SECONDARY LIST FOR BANS OR PHASE-OUTS**

Group A

1. Benzo(b)fluoranthene
2. Benzo(e)pyrene
3. Benzo(i)fluoranthene
4. Benzo(k)fluoranthene
5. Beryllium
6. bis(2-ethylhexyl)phthalate
7. Cadmium
8. Chloroform
9. Chromium (Cr⁺⁶)
10. Chrysene
11. Copper
12. Dibenzo(a,i)pyrene
13. 7H-dibenzo(c,g)carbazole
14. Dibenz(a,h)acridine
15. Dibenz(a,j)acridine
16. 7,12-Dimethylbenz(a)anthracene
17. 1,8-Dinitropyrene
18. 1,4-Dioxane
19. 1,2-Diphenylhydrazine
20. Ethylene Dibromide
21. Hexachlorocyclopentadiene
22. Indeno(1,2,3-cd)pyrene
23. Lead
24. Pyrene
25. Silver (free ion)
26. Styrene
27. 2,3,4,6-Tetrachlorophenol
28. Tetraethyl Lead
29. Thiourea
30. Uranium
31. Zinc

Group B

32. Aluminum
33. Chlorobenzene
34. Hexachlorobutadiene
35. Hexachloroethane
36. Pentachlorobenzene
37. 2,4,5-Trichlorophenol
38. Triphenyl Phosphate

Group C

39. 4-Chlorophenyl Phenyl Ether (1-chloro-4-phenoxybenzene)
40. Palustric Acid
41. Selenium
42. 1,2,3,5-Tetrachlorobenzene
43. Tetrachloroguaiacol
44. 2,3,4,5-Tetrachlorophenol
45. 1,2,3-Trichlorobenzene
46. Trixylyl Phosphate

. Large volume and/or widespread chemicals reported to have reproductive and endocrine disrupting effects.

PESTICIDES
HERBICIDES
2,4-D (90),(91)
2,4,5-T (92)
Alachlor (90),(93)
Amitrole (94),(95)
Atrazine (96),(97),(98)
Metribuzin (99)
Nitrofen (11)
Trifluralin (100),(101)
FUNGICIDES
Benomyl (102)
Hexachlorobenzene (103),(104),(105),(106)
Mancozeb (107)
Maneb (108),(109)
Metiram-Complex (110)
Tri-Butyl-Tin (111),(112)
Zineb (109)
Ziram (90)
INSECTICIDES
beta-HCH (113)
Carbaryl (92)
Chlordane (114)
Dicofol (29)
Dieldrin (105)
DDT & Metabolites (29)
Endosulfan (115),(116)
Heptachlor & H-epoxide (105)
Lindane (gamma-HCH) (117)
Methomyl (99)
Methoxychlor (48),(118)

Mirex (115)
Oxychlorane (114)
Parathion (119)
Synthetic Pyrethroids (120)
Toxaphene (115)
Transnonachlor (114)
NEMATOCIDES
Aldicarb (99)
DBCP (90),(11)
INDUSTRIAL CHEMICALS
Cadmium (121)
Dioxin (2,3,7,8-TCDD) (76),(77),(78)
Lead (122),(123)
Mercury (124)
PBBs (125)
PCBs (126),(127),(65)
Pentachlorophenol (PCP) (128)
Penta- to Nonylphenols (9)
Phthalates (129),(130)
Styrenes (9),(131),(132)

TESTIMONY OF JESSICA C. LANDMAN, SENIOR ATTORNEY, NATURAL
RESOURCES DEFENSE COUNCIL, INC

INTRODUCTION

Mr. Chairman and members of the Subcommittee, my name is Jessica Landman. I am a Senior Attorney with the Natural Resources Defense Council,¹ and have been with NRDC's Clean Water Program for seven years. Thank you for the opportunity to testify on the key toxic pollution prevention and control issues addressed in S. 1114, the Water Pollution Prevention and Control Act of 1993.

We welcome the introduction of S. 1114 because it signals the Congress' recognition of the gravity of environmental and human health threats that still face our nation's waters. The bill's strong focus on toxic pollution, along with such other key issues as polluted runoff and enforcement, is altogether appropriate. Although much progress has been made in reducing the release of toxic substances to our waters since the 1972 Clean Water Act was enacted, a great deal remains to be done.

To put the problem in perspective, it may be helpful to set forth a few facts and figures about toxics and water quality impairments that NRDC recently has assembled in a review of the status of our nation's waters twenty years after the enactment of the 1972 law:²

SUMMARY: STATUS OF OUR WATERS

1. *Traditional Measures of Progress are Incomplete and Inadequate. but Show Substantial Ongoing Impairment of Surface Waters*

According to EPA's most recent (1990) National Water Quality Inventory, we have a long way to go in meeting the goals of the Clean Water Act:

At least a third of our rivers, half of our estuaries and more than half of our lakes are not meeting designated uses, that is, are not safe for swimming, fishing and other uses. Considerably fewer waters are reported as meeting these uses in 1988-89 than in 1980-81. (In part, this may reflect better monitoring and reporting.)

But these reports are incomplete. Only 53% of river miles, 69% of lake acres, and 75% of estuarine area were "assessed" for the report. And even these claims are misleading, since "assessed" does not mean "monitored" for toxic and other pollutants. The 1990 Report was based on actual chemical measurements for less than a fifth of our rivers, streams, and lakes, and about a quarter of our estuaries.

2. *New Controls have Reduced Discharges of Pollution, but We Still have a Long Way to Go*

The percent of the U.S. population served by wastewater treatment plants jumped from 42% in 1970 to 67% in 1975, 70% by 1980, and 74% by 1985. EPA estimates that annual release of organic wastes have been reduced by about 46% as a result of this improved treatment, despite a large increase in the amount of wastes treated.

Industrial pollution controls have eliminated the release of almost a billion pounds of toxic pollutants each year into the Nation's rivers, lakes and coastal waters. Even higher amounts of conventional pollutants, like organic wastes and solids, have been controlled.

Still, we continue to release hundreds of millions of pounds of toxics into our surface waters and sewage treatment plants each year from unregulated or poorly regulated industries, and discharges of raw or partially treated sewage continue unabated in many areas.

3. *Long-term Water Quality Trends Show Inconclusive Results*

Despite the existence of thousands of water quality monitoring stations around the country, very little information collected at these sites is suitable to tell us how much progress has been made in overall water quality.

The little information available to judge long-term progress shows *no significant trends* in overall water quality. Where improvements are evident, they are in pollutants such as phosphorus, reflecting investments in sewage treatment plants. Where deterioration is shown, it is from nitrogen, sediment, and other pollutants characteristic of polluted runoff from farms and other lands.

¹ NRDC is a nonprofit environmental organization representing approximately 170,000 members nationwide. NRDC has been involved in each major overhaul of the Clean water Act, and has monitored implementation of the law at the Federal, regional and state levels since 1972.

² Documentation for the facts presented herein is available from NRDC and is contained in NRDC's forthcoming book.

4. "Real-World" Measures Show Some Progress but Serious Problems Remain

a. Many Waters Remain Unsafe for Swimming

In 1991, U.S. ocean and bay beaches were closed or advisories issued against swimming on more than 2000 occasions in coastal states that monitor beach water quality. High bacteria levels were responsible for the overwhelming majority of closures. Over 5,000 closures or advisories have occurred since 1988.

State water quality reports confirm that a quarter of our rivers and estuaries, a fifth of our lakes and ten percent of coastal waters remain unsafe for swimming.

b. Many Drinking Water Supplies Remain Jeopardized

The recent illnesses caused by Milwaukee's drinking water are not isolated. Reports from the Centers for Disease Control identify 525 disease outbreaks related to public water supplies from 1972-1988, affecting over 131,000 people. These numbers are conservative; some researchers believe that 25 times as many drinking water-related illnesses occur than are reported.

Between 27% and 30% of community drinking water systems reported violations of health-based standards from 1986-91.

c. Many Sources of Fish and Shellfish Remain Contaminated

In 1990, 31 states reported toxic contaminants in fish at levels exceeding action levels set by the Food and Drug Administration. Forty five states reported almost 1,000 fishing advisories in 1988-89, and another 50 complete fishing bans, due to pollutants such as PCBs, pesticides, dioxin, mercury, other metals, and other organic chemicals. These warnings affected over 7,000 river miles, almost 2.5 million lake acres, over 800 square miles of estuaries, and almost 5,000 miles of shoreline in the Great Lakes. EPA acknowledges that these reports are incomplete, and that state criteria for issuing advisories vary widely.

National data bases show some declines in chemical contamination of seafood, but increases and serious remaining problems for some chemicals, particularly in urban waters and other heavily-polluted areas. In a report released by EPA last year, almost half of the chemical forms of dioxins and furans, and a third of the other chemicals measured, were found at over half of the sampling locations. PCBs, biphenyl, mercury and DDE were found at more than 90% of the test sites. And every pollutant in the study was found in at least one location. EPA calculated that the levels of pollutants measured in fish around the country posed significant risks of cancer and other health effects for average fish consumers, and even higher risks to subsistence and recreational anglers who consume more fish from contaminated waters. Information is available, however, for only a handful of chemicals.

Sewage contamination of shellfish, however, is getting worse. The National Shellfish Register shows a 6% increase in estuarine waters closed to shellfish harvest from 1985 to 1990. By 1990, less than two thirds of our shellfish waters were unconditionally approved for shellfish harvest.

d. Aquatic Species are in Serious Jeopardy

Many more aquatic species are threatened and endangered than their terrestrial cousins: 73% of mussels, 65% of crayfishes, 34% of fishes, and 28% of amphibians are jeopardized compared to 13% of mammals, 11% of birds, and 14% of reptiles.

Between 1979 and 1989 the American Fisheries Society added 139 and removed 26 categories of fish from their list of threatened and endangered species, producing a total of 364 fishes that warrant protection due to rarity. *Not a single species was removed from the list due to successful recovery efforts, while 10 were dropped because they became extinct.*

e. Many aquatic and water-dependent populations are plummeting

Between 1970 and 1989, harvest of oysters dropped by 44% and landings of spiny lobster declined by 34%.

Commercial landings of striped bass have declined continuously since 1973, with a fall of 92% since 1982.

Between 1983-89 landings of bay scallops fell by 88%. Scallop landings also dropped by 50% from 1975-85, with catch per unit effort in 1985 reaching historic lows.

Duck breeding populations in North America dropped continually from 1955-1985. More recent data suggest that this trend has not been reversed. The ten species with over 97% of North America's breeding populations showed declines of 34% from 1970 to 1989.

According to data from the FWS Breeding Bird Survey, which has recorded flight records since 1966, a significant number of water-dependent species have declining population trends.

f. Pollution Continues to Cause Massive Fish Kills and Other Adverse Effects to Fish and Wildlife

From 1972-1989, EPA estimates that at least 429 million fish were killed in almost 10,000 incidents. (These data *under-represent* number of fish kills for several reasons.) The numbers of fish kills each year do not appear to be declining significantly.

From 1980 to 1989, NOAA reports over 3,650 fish-kill events in 533 coastal and near coastal counties in 22 states. These events involved over 407 million fish killed. In general, the total number of reported fish kills increased during the 1980s, but the average numbers of total fish killed per year declined.

Taken together, NRDC estimates that at least 1.35 billion fish have been killed in inland and coastal waters combined since the Clean Water Act was passed.

Pollutants continue to be released into our aquatic environments at levels that are toxic to aquatic species and to birds, mammals and other predators that consume contaminated fish. Studies in the Great Lakes indicate that toxic pollutants cause population declines and reproductive problems, birth defects, behavioral changes, sexual changes, and increased susceptibility to disease.

In sum, the Clean Water Act has not thus far succeeded in achieving the goals we established in 1972 for fishable, swimmable waters and an end to the discharge of toxic pollutants. S. 1114 takes a number of important steps towards closing key loopholes in the toxics safety net. Below we provide comments on Title II, "Toxic Pollution Prevention and Control."

Overview

Over the past two years as the Congress began the process of reauthorizing the Clean Water Act NRDC has emphasized in our analyses the urgent need to better incorporate pollution prevention concepts into the language and implementation of the law. We have stressed the need to "sunset" or phase out the release of the most harmful toxic chemicals; to streamline and overhaul the effluent guidelines and pretreatment program to make them responsive to pollution prevention and cross-media pollution issues; and the importance of pollution prevention planning in reducing or eliminating toxic pollution. We are pleased that all these issues have received attention in the Committee's bill, and look forward to working with the Committee to refine the legislation still further in the coming months as the bill moves through the legislative process.

I. Point Source Technology-based Controls

One of the principal means for achieving the Clean Water Act's goals of ending the discharge of toxic pollutants to surface waters and sewage treatment plants is the system of national technology-based standards for wastewater treatment and control: Best Available Technology (BAT) and New Source Performance Standards (NSPS) for facilities discharging to surface waters, and Pretreatment Standards for Existing Sources (PSES) and New Sources (PSNS) for those industries discharging wastewaters to sewage treatment plants. Since 1972 the intent of Congress has been that these standards would be continuously updated, moving whole categories of industries ceaselessly forward toward the law's zero-discharge goal through advancements in technology.

NRDC has testified before this Committee earlier on the potential that the system has to work effectively, and the failures of the EPA in the past decade to live up to the law's technology-forcing mandate. Rather than revisit that testimony here we include a copy and ask that it be placed in the record.³ This testimony will be limited to a review of the proposals contained in S. 1114.

S. 1114 tackles some key concerns in the technology-based standards program: the *need for a pollution prevention focus* for national standards, the *importance of cross-media pollution*, and the *need for resources* to keep the program from becoming out-of-date and moribund. In addition, the simplification of standard setting achieved by treating toxic, conventional and nonconventional pollutants alike, will make EPA's job far easier and cheaper. We salute each of these proposed reforms.

³ "Testimony of the Natural Resources Defense Council, Inc. before the Subcommittee on Environmental Protection of the Senate Committee on Environment and Public Works," July 9, 1991, submitted by Jessica C. Landman, Senior Attorney, NRDC.

POLLUTION PREVENTION IN NATIONAL STANDARD-SETTING

We strongly support revision to the language of sections 304, 306, and 307 of the Act which would clarify EPA's authority to set national standards that advance reliance on pollution prevention rather than a strict end-of-the pipe focus—a focus that unfortunately has been the hallmark of too many earlier standards. The bill would make explicit EPA's duty to "rely upon and require, to the maximum extent practicable, *source reduction measures and practices* including changes in production processes, products, or raw materials that reduce, avoid, or eliminate the generation of toxic or hazardous byproducts . . ." for national technology-based standards. The bill would also expressly "require the elimination of the discharge of pollutants" where technologically and economically achievable, language that is an unmistakable mandate to the Agency to stick to the zero discharge focus of the law.

There are some minor areas in which clarification is needed to ensure that the intent of Congress is clear. For example, additional clarification is needed that new sources (whether direct or indirect) will continue to be subject to standards that may go beyond those achievable by existing facilities.

Cross-media Pollution

In the past EPA has declined to exercise its authority over the Clean Water Act to prohibit industries from selecting technologies that could meet effluent limits through shifting of pollution impacts to other media—such as use of polluting air stripping to "remove" volatile organics from wastewater in the organic chemicals industry. Proposed revisions to sections 304, 306 and 307 would make clear EPA's responsibility to prevent such waste-shifting. Another welcome addition is the express mention of ground water and the duty to protect this vital resource against waste shifting.

The Need for Resources

EPA's ability to keep the standard-setting process on track has been hampered by a lack of resources. In keeping with the philosophy that the polluter should pay for the cost of cleanup, we support the provision of S. 1114 that calls for the collection of fees from direct and indirect dischargers to cover the costs of developing these national standards. There are some ambiguities in the bill that require clarification, such as the timing of assessments and the question of who must contribute, but these issues are not easily resolvable.

Pretreatment Standards: Time for a Change

Since 1986, two major EPA studies of the effectiveness of Publicly Owned Treatment Works in treating toxic pollutants have cast doubt on the ability of these facilities to do the job on a consistent basis.⁴ This is not surprising; POTWs are designed to treat conventional rather than toxic pollutants. Treatment of toxics that they do achieve can be inconsistent, and often is illusory—more a matter of shifting the substances from water to air or sludge. For these reasons we strongly support the proposed revisions to section 307(b) which would make technology based pretreatment standards for toxic pollutants equivalent to standards for direct dischargers. (Many of the same reasons that argue for stronger pretreatment standards also argue against a continuation of the "removal credits" program, which allows industries to increase their discharges of toxic pollutants to POTWs under certain circumstances. The relevant provision of the bill is discussed below in the context of the Pretreatment Program revisions.)

A Remaining Gap: The Rulemaking Schedule

A key issue that is not adequately addressed by S. 1114 is the schedule for the review and revision of all effluent guidelines, pretreatment and new source performance standards.

Under existing law, a variety of timetables apply: "annual review and, where appropriate, revision" for BAT standards under section 304(b); revision 'from time to time' for pretreatment standards under the current language of section 307(b). Various provisions in the bill would eliminate these requirements, as well as the provision calling for "annual" review and revision of existing guidelines that currently is in sec. 304(m)(1)(A). Taken together, these deletions leave the timetables for revision of existing guidelines completely to Administrator discretion (except that a plan for

⁴ "Report to Congress on the Discharge of Hazardous Wastes to Publicly Owned Treatment Works," US EPA, Office of water Regulations and Standards (February 1986); "National Pretreatment Program: Report to Congress," US EPA, Office of Water (July 1991).

future revisions must be written every 5 years). Given our past experience,⁵ we are concerned that the plans EPA may develop will not be ambitious enough to continue to advance pollution prevention goals. We therefore recommend that language be included in section 304(m)(1)(A) calling for mandatory review of existing guidelines on a predictable cycle (such as every five to seven years) and, where appropriate, revision of the guidelines and pretreatment standards.

Triggers for Revising and Updating Standards

The bill would be further strengthened by adding new "teeth" to the provision requiring the Administrator to revisit guidelines as pollution prevention advances occur. As currently framed, the Administrator has broad discretion to decide whether there have been "significant changes" warranting a revision of effluent guidelines. The bill should include triggers ensuring that certain data sources are reviewed that would highlight such changes and bring them to the EPA's attention. It should require the Administrator to evaluate, at a minimum: (i) innovations that have resulted from water quality-based permitting pursuant to 301(b), and (ii) TRI data indicating a trend of significant reductions in releases (to any medium) by a category of industry. Finally, the bill should include a judicially reviewable petitioning process enabling interested parties to seek revisions.

It also would be advisable, throughout sections 304, 306, and 307, to cross-reference EPA's duties under the Pollution Prevention Act (42 USC sec. 13103(b)) to coordinate Agency-wide activities that promote pollution prevention; this could change an otherwise applicable schedule in water program rulemaking so that cross-media impacts could be better addressed (as with the pulp and paper rulemaking cluster).

II. Water Quality Criteria and Standards

Water quality standards for toxic pollutants are the second key component of the overall Clean Water Act framework: they define healthy ecosystems and establish targets for permit writers and for those seeking to control polluted runoff. As with the effluent guidelines program, EPA's water quality standards development process has been in low gear for a number of years. Congressional action is badly needed to get the program back on track. For years environmentalists and others have urged EPA to develop criteria to fill key knowledge gaps, particularly for pollutants that are of concern in runoff and in contaminated sediment. The bill takes some important steps in this direction.

The legislation proposes to use the same technique as was applied in 1987 for effluent guidelines: allow EPA to set its own priorities, but require that the agency develop a plan of action for the drafting of water quality criteria. We agree, up to a point: a plan clearly is needed, and EPA should have a modicum of discretion in deciding on the pollutants that will be high priorities for the development of water and sediment quality criteria. However, a measure of additional Congressional direction still is needed:

Sediment Quality Criteria

We strongly support the addition of explicit mention of sediment in the environmental effects that must be considered in developing criteria documents. This will lend clear Congressional support to development of sediment quality criteria.

But Congress should give EPA clearer direction as to which criteria to develop first. In addition to PCBs and dioxins (already cited in the bill), certain metals and other compounds in sediments are ubiquitous and/or pose a very high risk to humans and aquatic ecosystems, and thus should be high priorities for EPA's criteria program. The bill should *set these substances out explicitly and establish a timetable for promulgation in the first planning round*. After that, discretion can be given the Agency to set priorities. The mandatory list should include, in addition to PCBs and dioxins, the following: mercury; PAHs; copper; cadmium; lead; arsenic, and ammonia.

Nonpoint Source Water Quality Criteria

Similarly, we welcome the requirement that, within 3 years, EPA promulgate water quality criteria specifically directed at polluted runoff sources. The bill needs to clarify that this responsibility exists independent of the cyclical planning process, and requires immediate resource commitments.

⁵ NRDC has on two occasions taken EPA to court to compel the Agency to carry out statutory mandates for development of effluent guidelines.

Wildlife Criteria

Development of water quality criteria to protect wildlife should be incorporated into the planning process expressly. Particularly for bioaccumulative substances, raptors and fish-eating mammals are at great risk from contaminated fish consumption.

State Water Quality Standards

The 1987 amendments to the Clean Water Act reflected Congress' frustration with the States' failure to adopt water quality standards for toxic pollutants and put them to use in permit-writing and evaluation of water quality. Yet, despite the fact that Sec. 303(c)(2)(B), enacted in 1987, *required* States to adopt numerical water quality standards for toxics that impaired or threatened their waters, a dozen States failed to act by 1992—and EPA was compelled to step in and issue Federal standards in those states. This bill now takes the next logical step to avoid this type of unacceptable delay in future, by calling for automatic classification of State waters where States fail to fill remaining classification gaps, and automatic applicability of Federal water quality criteria in the absence of State objections. We endorse these concepts, but believe some clarifications are needed.

First, the bill should clarify that a State which chooses to "object" to a Federal criterion and adopt its own cannot establish an alternative criterion that is less protective than the Federal 304(a) criterion. Second, the inter-play between State- and federally-adopted criteria requires clearer explanation to avoid confusion.

Antidegradation

The mandate to maintain the existing water quality of waterways that are still pristine has been a part of the Clean Water Act since its inception, and was made explicit in the 1987 amendments to the law. Yet, virtually all States still lack coherent programs to implement EPA's antidegradation regulations. A ringing endorsement of the importance of keeping clean waters clean, and protecting our outstanding natural resource areas from encroachment, is badly needed from the Congress.

Thus, we strongly support inclusion of a clear Congressional mandate for antidegradation in the law (as well as the interweaving of sediment quality into the concept of antidegradation). This provision will end all further debate as to the authority and duty of States and EPA to act in this area. We also strongly support the provision in the bill aimed at protecting outstanding national resource waters in parks, refuges, etc.—as far as it goes.

But a few changes are needed in the bill to ensure that the law's goals are enhanced:

First, the bill must close the loophole of pollutant by pollutant "downgrading." Some states have tried to declare that a water body was not subject to antidegradation review if *any one pollutant* was not meeting or exceeding applicable water quality standards. The bill should clarify that this is not a correct interpretation of the law. In other words, antidegradation review should be triggered on a parameter-by-parameter basis whenever anyone wishes to degrade water quality in a body of water that is cleaner than the applicable standard for that substance for which the increased discharge is sought.

Second, the bill should answer the key question: How much reduction in water quality may be allowed? The bill should include a sentence spelling out that "*any reduction in water quality or sediment quality must be kept to the lowest level possible that can accommodate the important economic or social development.*" This will foreclose the temptation to use an antidegradation review to justify unnecessarily sweeping degradation.

Finally, antidegradation reviews must be made meaningful tools in the avoidance of polluted runoff degradation as well as point source degradation in pristine areas. Antidegradation reviews today typically are triggered (if at all) only by the application of a permittee for new or increased discharges. The bill should call for EPA to develop, and the States to implement, a policy for triggering such reviews when new or increased landdisturbing activity is likely to cause increases in polluted runoff to high quality waters.

Outstanding National Resource Waters

The legislation makes some very important advances in the protection of enactment national resource waters. We strongly support the adoption of a process that requires States to set aside these waterways for protection, or at least provide a clear and convincing rationale why this should not occur.

But several important refinements are needed to this section. First, *State* parks, refuges, etc. should also be presumptively included in the Outstanding classifica-

tions, with the same option for the State to make a case against their inclusion. Similarly, waters feeding a public water system that has been granted a waiver from filtration requirements of the Safe Drinking Water Act should be presumptively included.

On the other side of this coin, presumptive inclusion of designated Wild and Scenic Rivers should be limited to waters classified as wild or scenic, but not to those included in the system under the "recreational" rubric; these tend to be less-pristine urban waterways.

Mixing Zones

We strongly oppose the inclusion in the bill of a provision that authorizes the use of mixing zones for toxic substances. Inclusion of such a provision actually weakens current law, which does not specifically recognize the acceptability of mixing zones.

If this provision were revised to refer only to conventional pollutants, we would be willing to accept it; as currently written, we would prefer that it be deleted altogether.

III. Toxic Pollutant Phase-Out

The revision of section 307 to facilitate the prohibition of discharges of toxic or bioaccumulative substances will help to focus attention on this problem, and we welcome that focus.

But as written the revisions contain a fatal flaw.

Most important, the bill's new limitation that a substance, to be eligible for a prohibition, must "occur in surface waters predominantly as a result of discharges" (new sec. 307(a)(4)(B)) must be reconsidered. It would effectively offer dischargers an invitation to show that someone else—even their own facility's smokestack—was releasing more of the substance to a medium other than water. We cannot accept this restriction on the availability of effluent prohibitions for the following reasons:

First, the proposed requirement that prohibitions be only for 'predominantly discharged toxics effectively encourages medium shifting from water discharges to other media. This runs counter to a key goal for revising the Clean Water Act: *discourage the toxic shell game*. The Clean Water Act revisions should be the first important step in *closing* the medium-shifting loophole; this proposal moves in the *wrong* direction.

Second, if EPA has to show that it knows the "predominant" method of release of a substance it will have to fight endlessly to prove that 50.1% of releases occur through point source discharges before it can act.

Third, even if only a fraction of total environmental exposure occurs as a result of water discharges, this is not a reason to hamstring EPA's ability to go after that known, and controllable, fraction—particularly in cases where we know that current exposure levels are at or near imminent risk levels for the population at large.

If the concern is that too many resources will go into eliminating too small a fraction of the risk posed by a substance that is highly toxic but is not principally released through discharges to water, then we should seek to fashion a better mechanism for getting at that problem. After all, releases to other media (air, solid waste/soil) ultimately can and do become important sources of water contamination. While it is more difficult to get a such second-hand dischargers' *directly* through a discharge prohibition under the Clean Water Act, we should use this reauthorization to move in the direction of multi-media toxic use and release reduction.

This bill should encourage creation of multi-media approaches (like EPA's lead cluster)—including remediation for in situ contamination—as part of the effluent prohibition process in those instances where direct discharges are not the principal source of contamination. Perhaps this can be accomplished by creation of a process for identifying all sources of releases of listed substances, and recommending to the Congress legislative or regulatory revisions to this or other laws necessary to prevent or remediate releases to other media.

Report on Developmental Effects

We very strongly support the provision in S. 1114 that calls upon EPA to conduct a study of the effects of toxic pollutants on the development of aquatic species, humans and wildlife, including impairments to reproduction, endocrine and immune systems caused by the pollutants. We recommend that it be enhanced by calling for consultation with other relevant Federal agencies such as the National Institute for Environmental Health Services, and the Fish and Wildlife and National Marine Fisheries Services—and that the report include recommendations on any needed changes to Federal government risk assessment techniques to better account for non-cancer health and ecological effects.

IV. Pretreatment Program

Pretreatment Standards for Otherwise Non-Participating Facilities

We do not oppose creating explicit authority for the Pretreatment Approval Authority to impose pretreatment requirements on industrial users not otherwise part of the program, as this bill does in section 204(a). But it should be noted that EPA has the authority (and the duty) to see to it that all POTWs that need pretreatment programs do develop them, regardless of size or other factors.⁶ Along the same lines, all dischargers in categories for which national pretreatment standards have been adopted must obey those standards, whether or not the receiving POTW is in the Pretreatment program—and general discharge prohibitions against corrosive, explosive and fume-toxic discharges also apply to all industrial users under existing rules. For these reasons, it is unclear how the new provision would work.

Removal Credits

Removal credits are far simpler in theory than in practice. Theoretically, some national pretreatment standards might impose “redundant” treatment requirements on industrial facilities because the POTWs receiving their wastes are capable of treating their toxic pollutant discharges. Therefore, in theory, these industries should be allowed to have “credits” for the pollution treated by the POTW.

In practice, it is not so simple. As noted above in this testimony, POTWs rarely if ever can provide a documented, consistent level of treatment to toxic pollutants. In addition, toxics often are not fully treated (biodegraded) but instead are partitioned to other media (metals to POTW sludge, volatile toxics to the air).⁷

The revisions to the removal credits section of the law proposed in S. 1114 acknowledge these difficulties by narrowing the availability of such credits to substances that are *actually* biodegraded at the POTW. This is an important improvement over existing law; however, it leaves many questions unanswered—and leaves EPA with an extremely resource-intensive job to do in determining whether removal credits should be granted.

For example, it requires EPA to “determine” whether the “treatment by the treatment works results in the biodegradation of the toxic pollutant.” Does this mean 100% degradation? Who provides the proof? EPA would have to make a determination; would it be made via national rule/guidance, or on a case-by-case basis?

Other problems with removal credits would still remain. What happens if the POTW is subject to combined sewer overflow problems—so that rainfall results in no POTW treatment for some time period? In short, the administration of the program would remain very cumbersome.

We continue to support the approach taken in earlier draft legislation from this Subcommittee—simple elimination of removal credits. Apart from its environmental benefits, this action would allow seven of the most incomprehensible pages of the Code of Federal Regulations to be deleted.

Domestic Sewage Exclusion

As with the removal credits issue, the Domestic Sewage Exclusion had its roots in the idea of avoiding redundant regulation: substances regulated adequately under the Clean Water Act (through the pretreatment program) should not be subject to dual regulation under the Resources Conservation and Recovery Act. The problem has been that the scope of the Exclusion has far exceeded the reality of Clean Water Act regulation. Only a handful of hazardous substances in a handful of specific industries otherwise subject to RCRA actually have been regulated under the Clean Water Act.

For this reason, we agree strongly with the authors of S. 1114 that the exclusion from RCRA coverage should be narrowed to cover only those hazardous wastes that are in fact subject to meaningful coverage under the Clean Water Act. Therefore, we support these revisions. It is appropriate to give a five-year phase-in to this narrowing provision for upcoming effluent guidelines and pretreatment standards, to avoid short term regulatory confusion.

V. Pollution Prevention Planning

Although the nation remains largely reliant on mediaspecific statutes for the prevention and control of toxic pollution, in the past several years (through such actions as the adoption and implementation of the Pollution Prevention Act) Congress

⁶ See 40 CFR § 403.8(a).

⁷ See “National Pretreatment Program: Report to Congress,” U.S. EPA, (July 1991) at Ch. 4.

and EPA have begun to move towards a more universal mechanism for encouraging the generators, users and disposers of toxic materials to avoid problems before they occur. In reauthorizing the Clean Water Act it is crucial that Congress continue to move towards a multi-media approach to pollution prevention, even in the context of what remains largely a single medium bill. Pollution prevention planning for dischargers to surface waters and POTWs is an appropriate and logical next step along the way. We strongly support the provision in S. 1114 that requires certain industrial facilities to conduct pollution prevention planning, goal-setting and reporting on achievement of those goals.

We also look forward to a careful evaluation of Senator Lieberman's pollution prevention planning legislation, for possible integration into the Clean Water Act package.

The substantive content of the plans spelled out in proposed new subsection 308(f)(3)—pollutants covered, establishment of goals, annual reporting, availability of plan summaries, inclusion of water use efficiency—are very positive. We do urge one essential addition to the bill's mandate: namely, that the plans should be developed on a *production unit basis* within the facility.

There are some additional clarifications and refinements needed, which are spelled out below:

First, who is covered by the planning requirements? We support a requirement that pollution prevention planning be undertaken by all 402-permitted facilities and indirect discharging facilities who are required to report under the Emergency Planning and Community Right-to-Know Act. This will capture the largest facilities first, and the numbers of reporting facilities will expand in an orderly fashion as the EPCRA requirements extend to smaller quantity releasers and additional chemicals and categories of facilities.

If we understand the bill correctly, EPA will issue regulations specifying who will be covered by the planning requirements within two years. Also, EPA will publish a list of at least 20 substances where discharge reductions are likely to be beneficial, and will have to ensure that 80 by volume of these 20 substances are covered by plans. What is unclear is whether EPA's rules can capture dischargers of substances other than the key 20 so identified. Is the "key 20" simply intended to help EPA target certain facilities should be covered? Can EPA extend its requirements to other EPCRA-reporting facilities under the bill? We urge that the bill simply spell out that the EPCRA reporters be covered at a minimum, and as a supplement impose the "key 20" requirement as an added mechanism for making the planning effort productive.

Furthermore, the question of which indirect dischargers will be covered requires clarification. As drafted, the bill refers to parties who "appl[y] for" local limits. In general, indirect dischargers do not actually apply for such limits but are subject to their imposition from the pretreatment program authority.

Finally, which pollutants are covered? As we read the bill, all 307(a) substances reported under EPCRA are the subject of these plans—but EPA is to pick the "key 20" substances for planning/reduction on a parallel track of sorts. Must the "key 20" also be 307(a) toxics? It seems logical to ensure this "feedback loop" occurs with the revisions to 307(a) made in section 202 of this bill.

VI. Innovative Technology

We support inclusion of the provision in section 502(h) that would replace the law's existing clause allowing compliance deadline extensions for innovative/alternative technologies.⁸ This bill would create a special waiver from otherwise applicable permitting requirements to allow experimentation with innovations in technology. It should assist facilities that want to conduct experiments but are concerned with potential permit exceedences. The provision contains appropriate safeguards to prevent abuse (such as the short duration of the waiver and the requirement that water quality standards be achieved).

Conclusion

With only a few important exceptions noted herein, we are pleased to see the direction in which S. 1114 advances pollution prevention in the effluent guidelines, pretreatment, planning and standard-setting arenas. We look forward to working with you further on the legislation over the coming months.

⁸ Clean Water Act Sec. 301(k).

WRITTEN TESTIMONY OF DR. JEFFREY SILLIMAN, AMERICAN TEXTILE
MANUFACTURERS INSTITUTE

Senators, thank you for soliciting the advice of the American Textile Manufacturers Institute specifically and those of us in the industrial community regulated by the Clean Water Act in general. My name is Dr. Jeffrey Silliman, and I chair the ATMI Environmental Preservation Water Subcommittee as well as manage environmental affairs for Milliken & Company, headquartered in Spartanburg, South Carolina. I, like those with me today, feel we can speak to the front-line successes and shortcomings of the Act, and appreciate the opportunity to testify today. Given that textile facilities are in located in many small to medium-size communities, such as those found in many of your own states, I'm sure you will be able to relate to many of my comments.

Generally speaking—

- *Don't rewrite the Clean Water Act.* Simply reauthorize it and make whatever minor revisions necessary. EPA already has numerous responsibilities from the 1987 reauthorization on which to act. Moreover, it has plenty of existing authority on which to act to protect the nation's waterways and the health and environment of the general public.

In addition, it should be noted that EPA's Office of Water faces significant funding cuts and staff reductions in the upcoming fiscal year and need not be hindered with new responsibilities. With fewer new responsibilities, EPA's Office of Water could focus instead on developing criteria and guidance documents based on *sound science* that are respected by the environmental and regulated communities alike and that are less likely to be challenged in court.

As you rewrite S. 1114 to make it a more widely accepted reauthorization vehicle, I hope this advice will remain foremost on your minds, particularly given the major reauthorization and funding battles that lie ahead concerning RCRA, Superfund, and numerous other federal environmental statutes.

As for specific provisions of the bill, I will be addressing various issues of particular concern to ATMI and the domestic textile industry and will discuss them in order of their importance to the industry.

Water-Quality Issues

- *Congress should refrain from adopting any new and arbitrary provisions aimed at reducing toxic substances until the water-quality program that Congress enacted in the 1987 Act has been given the opportunity to be fully implemented and refined—both scientifically and administratively—by EPA and the states, and results have been given a fair opportunity to be realized.*

The success of the effluent guidelines program, intended to clean up point-source discharges with advanced technology controls, has been acclaimed almost universally in Congress, EPA, the regulatory communities and elsewhere. Less than fifteen percent of remaining water-body contamination can be attributed to point-source pollution, according to EPA.

In 1987, Congress called upon EPA to address remaining toxic water problems through the creation of a risk-based water-quality program. Under the program, states would be asked to identify the various uses of the water bodies within their boundaries—be they recreational, residential, commercial, agricultural or industrial—as well as to identify the toxic "hot spots" and pollutants of concern. EPA would develop acceptable risk levels or water-quality criteria for these pollutants. States then could adopt these water-quality criteria as state water-quality standards and incorporate them as limits into permits for dischargers on these sensitive water bodies. Compliance with these permit limits came due just this past year, however, due to delayed program implementation in some states, the success or failure of the program is, for the most part, still outstanding.

Where states haven't acted, EPA recently issued the National Toxics Rule stipulating that EPA's water-quality criteria automatically would become the water-quality standards in those states. Compliance is due within the year.

All of this has taken place within the last six years. Thus, the "verdict is still out" on how successfully the water-quality program instituted under the '87 Act has eliminated toxics. And, to adopt any new, far-reaching provisions to do the same is premature and cannot be scientifically justified. Let's continue to focus the nation's limited resources on refining the existing program to ensure results before moving ahead and adding another.

- *Moreover, Congress should refrain from adopting any new toxics provisions that take a national approach and fail to recognize the site-specific nature of ecosystems and the much-needed state and local flexibility to address them.*

S. 1114 significantly reduces the discretion and flexibility of states to act as they see appropriate given the community's needs and environmental interests. Mandatory water-quality numeric standards (versus narrative), national pretreatment guidelines, widespread toxics bans and the like advocated in the bill limit the options states and localities may identify and develop.

Moreover, these provisions convey a very paternalistic message that "Congress, not States, knows best." One of the fundamental elements of the nation's environmental statutes is state autonomy and flexibility, and S. 1114 reduces it to a pithy political platitude.

- *Congress continually focuses on "toxics"—anything can be toxic's at certain doses. Congress instead should focus on "bioavailable toxic's" and in doing so, assist EPA in being more resourceful with its limited resources.*

Simply stated, by focusing on bioavailable toxics, EPA can focus on toxics that present a risk to human health and/or the environment versus those that don't.

- *Scientific over generalizations can lead to costly economic consequences. Sound science is needed to justify action.*

As previously mentioned, in the '87 Act, Congress instructed EPA to issue water quality criteria for numerous substances at toxic levels. When issuing these criteria for toxic metals, however, EPA failed to take into account the diverse forms of various metals and that not every type or form of a metal, say copper or silver, are bioavailable to present a risk to human health or the environment. Lacking good scientific data, nevertheless, EPA proceeded in issuing water-quality criteria for metals by generalizing that all metals are bioavailable and toxic and by using overly conservative assumptions, resulting extraordinarily low metal limits being incorporated into permits.

What I am talking about? Corroding pipes, naturally-occurring metals, and the commercial use of various products containing metals—from copper to chromium, mercury to manganese, and zinc to lead. These metals are present in the municipal and industrial discharges to our nation's waterways.

There's not a member of this Subcommittee that doesn't have a constituent interest here—be it a copper mine outside of Billings, Montana; a jewelry manufacturer in Providence, Rhode Island; a photo-finisher in Utica, New York; a dentist in St. Paul, Minnesota; a computer manufacturer in San Jose, California, a textile plant in Hickory, North Carolina; a steel mill outside Pittsburgh, Pennsylvania or a municipal wastewater plant in Newark, New Jersey. Pennsylvania—they're all subject to extremely low metal limits that are pose extraordinary costs to meet.

- *Because of the prevalence of facilities impacts by EPA's water-quality criteria for metals and the excessive cost incurred by municipalities and industries nationwide for treating metals to these low limits, Congress should amend the Clean Water Act to address "bioavailable" toxics.*

A case in point: One textile company has spent upwards of \$300,000 and four years demonstrating to the State of South Carolina that the metal in textile dyestuffs, in this case copper, is not bioavailable nor toxic and therefore the state environmental agency should not use EPA's stringent criteria for copper in developing discharge permit limits for the form of copper present in this facility's effluent.

Because the metals exists, however, in all likelihood, the company will see a metal limit in the fraction of a part per million range in its permit that will require treatment and operating costs involving thousands of dollars annually but will have minimal, if any, environmental benefit because the copper chemically is not bioavailable to harm human health or the environment.

- *Moreover, Congress also should require EPA to undertake its desired scientific review of its metals criteria within the next 12 months and act upon its findings within the next 24 months.*

In January, ATMI participated in an EPA metals workshop where experts reviewed the Agency's controversial metals criteria and discussed the textile industry's predicament in particular. The experts recommended to EPA, and the Agency has concurred, that more research is needed, but due to funding cuts, may never be initiated or, if so, in the far-distant future—as businesses and cities go bankrupt trying to comply.

To mitigate any further costs from its controversial metals criteria, Congress should mandate that EPA focus on bioavailable toxics that present a real, scientifically justified risk to human and the environment, and stipulate that the Agency act on their proposed metals studies in the near, rather than long, term. U.S. competitiveness and municipal solvency is at stake.

- *Finally, Congress also should require EPA to use the rule-making process, and specifically the Advanced Notice of Proposed Rule-making (ANPRM), to notify the regulated community that it is investigating and preparing a rule or guidance, particularly the latter, that might affect them and that they can come to the Agency prior to anything ever being written and demonstrate why the guidance would not apply to them or how the EPA's approach to implementation might be flawed.*

Presently, public notification is required for the proposal and issuance of only rules, not guidances, and even then by the time something is in writing, it is difficult to alter EPA's position. Requiring an ANPRM for every proposed rule and guidance would reverse the Agency's tendency to regulate first, de-regulate later, and save the regulated community and EPA much time, effort and money in correcting its overly-conservative assumptions and past mistakes. The Agency's water-quality criteria for metals, previously mentioned, provide an example of how an ANPRM could have prevented the problems that later beset the domestic textile industry.

Effluent Guidelines

- The overlapping interests and requirements of the Clean Water Act, the emergency Planning and Community right-to-know Act, the Pollution Prevention Act, the Oil Pollution Prevention Act and other federal environmental statutes ensures that regulated industries and municipalities are continually reviewing their operations and incorporating pollution prevention concepts and programs—for environmental as well as financial reasons.
- Similarly, we agree with the bill's provisions to incorporate pollution prevention concepts into the development of effluent guidelines, where appropriate, and to ban the transfer of pollution across media. These are concepts that already are in practice throughout industry and at EPA.
- ATMI is staunchly opposed to any mandated detailed review and control of industrial operations, as proposed in S. 1114.

By proposing such requirements, Congress fails to recognize the environmental progress and pollution prevention progress that companies are making every day.

Moreover, Congress is assigning EPA an enormous responsibility for which it has neither the manufacturing expertise, financial resources or manpower to undertake. Clearly, there is a lack of appreciation for the number and diversity of products in all industries, including the textile industry, and the processes that would have to be identified and controlled.

Generally speaking, if a facility is in compliance with all environmental requirements, such intrusions into its normal business operations is not called for.

- Finally, given the widely acclaimed success of the effluent guidelines program in cleaning up point-source discharges and given the fact that less than 15 percent of remaining water contamination problems can be attributed to point-source discharges, perhaps the Congress should focus the nation's limited resources on the primary source of remaining water contamination, namely non-point sources.

Mixing Zones

- Congress should retain mixing zones in order to accurately assess the true impact of discharges on a water body and to allow nature to act on its innate capacity to assimilate.

In many instances, for example, with treated textile effluent from a weaving mill, nature has as innate capacity to assimilate and handle the discharge from the facility. In fact, biological wastewater treatment systems—the type most frequently found within the textile industry—are modeled after nature itself. To determine whether or not a discharge impacts a water body, however, industry and municipalities—more the latter—need mixing zones. Without them, we must rest on generalizations from tests run in controlled laboratory settings. Only through the use of mixing zones can industries and municipalities accurately assess the true impacts and address them. For many years, EPA has sup-

ported the use of mixing zones to further its holistic approach to water management.

Pretreatment

- *Federal pretreatment standards are redundant and unnecessary.* For the most part, POTWs already impose local discharge standards on industrial dischargers across the nation. These standards prevent discharge of any substance or substances that could interrupt or overwhelm the treatment system or that could pass through a cause a compliance problem with the POTW's permit. Development of federal pretreatment standards would be redundant and a waste of the EPA Office of Water's limited financial resources.
- *Instead, invest in POTW construction and operator education.* Rather than impose redundant treatment, industrial dischargers and localities would be better served with construction of POTW systems accompanied by funds to ensure the proper education and training of POTW operators. To this end, Congress should require that for every dollar loaned from the State Revolving Fund, X percent should go toward annual operator training to ensure comprehension and proper use of EPA's criteria and guidance documents—annual because of the constant issuance of new or revised EPA criteria and guidances being adopted by states.

In the textile industry's experience, particular in rural and mid-sized communities, all too many POTW operators lack the proper education to understand and apply EPA's mandates as they are adopted and implemented by states—for instance, EPA's water-quality criteria. This results in sometimes total misapplication of EPA criteria, inefficient POTW operation, costly, but unnecessary treatment, costly and protracted permit renewals for both permittees and local and state agencies, and questionable environmental benefits. I speak from experience. Nearly 70 percent of textile dischargers are indirect dischargers through POTWs in mid- and small size communities.

A case in point: One textile company in North Carolina was told by their local POTW to reduce their discharge of copper and zinc to the level of several parts per million. Yet, the city was adding copper sulfate to their system to inhibit algae growth and zinc sulfate to inhibit corrosion—both at levels that made the plant's in-coming water exceed the very water-quality limits for zinc and copper that they were imposing on the plant. The operators did not recognize the substances were being used nor did they comprehend how to properly adjust the metals limits of dischargers using their system to accommodate for their use. As a result, they were wreaking havoc and imposing overly-stringent limits on everybody including themselves.

Domestic Sewage Exclusion

- *Congress should retain the Domestic Sewage Exclusion.* It is a creation of Congress and the legislative process that has proven to be an effective and efficient manner for handling hazardous wastes. EPA and the regulated community can show that the exclusion, which allows facilities to discharge trace hazardous wastes to POTWs for treatment, has provided for the proper treatment and safe discharge of these wastes, minimal though they may be. Were it otherwise, companies could not afford, nor in many urban localities could space be found, for equivalent treatment. And, given the low detection levels that categorize a waste as hazardous, the potential for improper treatment, storage and disposal of hazardous waste would be greatly expanded.

Stormwater Permitting and Management Program

- *Allow industrial facilities that can demonstrate to EPA that they have, in EPA's terms, "no potential for stormwater contamination" to exit the stormwater permitting system and be managed under urban stormwater management plans.* This would minimize paper shuffling at both EPA and affected facilities. And, it would allow the Agency to focus on the truly "bad actors," where stormwater contamination presents real problems and allow affected facilities to focus on complying with other pressing environmental mandates.

A case in point: Many textile companies not only manufacture fabric, but also cut and sew their fabric products into apparel. These "cut-n-sew" operations use minimal, if any, chemicals and have minimal potential for stormwater contamination, but by virtue of being manufacturing operations where industrial activity takes place, are subject to the stormwater permitting requirements. If no potential for contamination exists, then common sense dictates that these facilities and others should be exempt from the permit requirements and should be

managed under larger urban stormwater management programs. Moreover, we fear that stormwater permits could become the domino triggering other requirements, just as we have seen SARA, Section 313 reports become.

- *S. 1114 grants some municipalities a waiver and others a ten-year delayed compliance schedule from the requirement that their stormwater discharges meeting numeric water-quality limits.*

Given the uncertainty about the extent and nature of the stormwater program and how to effectively manage stormwater discharges, Congress should grant the same exemption to industry and allow the success or failure of the "Best Management Plans (BMPs) and Stormwater Pollution Prevention Plans required of permitted facilities to be realized. If, numeric limits are then called for, mandate them in the next reauthorization.

Pollution Prevention

- *The marketplace already is well ahead of government at all levels at recognizing the production and cost efficiencies of adopting the pollution prevention philosophy.*

A case in point: For several years, the investment firm of Alex Brown & Sons has consistently overestimated the potential performance of stock prices for environmental control and clean-up firms. When they went looking to find the reason why they were consistently overestimating the potential value of these stocks, they realized they were looking for and found related government developments that would increase the demand for the services these firms offered, i.e., "end-of-pipe command-and-controls". What they failed to notice was that businesses and municipalities that normally would retain their services were instead taking concerted steps to avoid environmental control and clean-up costs and were adopting waste minimization and pollution prevention programs.

- *If Congress wishes to further advance pollution prevention, it should focus on providing technical assistance to companies and communities.*

The biggest hurdle to incorporating pollution prevention practices into any manufacturing operation is technical comprehension and application. The textile industry has many resources to draw upon in this area. There are numerous corporate research & development divisions within our industry, various colleges of textiles at universities throughout the Northeast and Southeast United States, and also several non-profit research institutions like the Institute for Textile Technology.

In addition, the textile industry can rely upon scientists at the U.S. Department of Energy National Labs. As a result of a recent joint agreement between the industry and the labs—the first joint agreement of its kind, which we now commonly refer to as "Amtext"—over \$15 million will be spent, in part, for research on waste minimization through technologies that facilitate reuse and recycling and, more importantly, by fundamental manufacturing process changes. Similar such funds and technical assistance should be made available nationwide to all industries and communities.

- *Moreover, if Congress wants to further advance pollution prevention, any organized program should be voluntary.*

The success of EPA's "33/50" program is a testament to the success that can be realized through voluntary programs. Numerous textile companies, including Springs Industries, Collins & Aikman, and my own employer, Milliken & Company, have not only achieved, but surpassed in many categories the mandated program goals.

Were Congress to mandate participation in a pollution prevention program with complicated annual reporting requirements and the like, it likely would divert resources from on-going programs that are generating real breakthroughs to generating more stacks and paperwork.

Fees

- *Where fees are required in S. 1114—for effluent guideline development, permits or discharges, Congress should require the input of the regulated community as to how the funds are to be used and an accounting of how the funds actually are used.*

In the case of fees assessed by POTWs, industrial and residential surcharges should be increased at approximately the same rate and be apportioned to reflect the existing use of the system.

Finally, the fees that are generated from NPDES permit holders, directly or indirectly, should be appropriated solely for point-source programs.

Risk Assessment

- *The nation's ability to detect pollutants in the parts per million, per billion and now per trillion level is overwhelming our ability to pay for the protection of human health and the environment to these same levels.*

Therefore, Congress should mandate realistic risk assessments and corresponding cost benefit analyses, and, with EPA's expertise and assistance, prioritize the risks to human health and the environment that are addressed by existing federal environmental statutes. This may be an overwhelming, if somewhat undefined task. Still, if Congress fails to act, EPA forever will be pursuing to eliminate parts per million, per billion, per trillion and so on of a substance that poses relatively minimal risk in one situation while overlooking, or more appropriately underfunding, the elimination of, perhaps, the same substance, in another situation where it poses a relatively more serious and widespread risk. This is a costly chase that few industries or communities have funding to pursue. Risk assessments accompanied by cost-benefit analyses are needed.

A case in point: Presently, the general public can drink water with more copper content than textile companies are permitted to discharge in their wastewater. Which is the greatest risk and where should the limited funds of federal, state and local governments be allocated?

Senators, as I speak, SARA, Section 313 chemical reporting forms are coming due, companies are notifying EPA of their ability to properly recycle and reclaim refrigerants under Title VI of the Clean Air Act Amendments and others are submitting Spill Prevention, Control and Countermeasure Plans under the Oil Pollution Prevention Act of 1990. Given these numerous and varied requirements, I ask you, therefore, to *recognize the context—the environment, if you will—in which efforts to comply with environmental mandates are being made.* To those of us trying to comply with federal environmental requirements, we are grappling not just with Clean Water Act mandates, but also numerous other requirements under various other federal, state and local environmental laws, all simultaneously. In today's economic environment, its easier to say, "get it done" than it is to do—particularly when the problem exists at the several parts per billion or trillion level.

Moreover, I ask that you recognize industry's efforts to date to minimize pollution and assist EPA in enhancing our environment. The success of Clean Water Act in cleaning up the nation's waterways can be, to great deal, attributed to industry's joint efforts in developing and complying with EPA's effluent guidelines and in jointly constructing—and in many cases, helping POTW managers operate—the POTWs in our communities. EPA recognizes this, we hope you do as well.

American Textile Manufacturers Institute (ATMI)

In closing let me put my statements in context and state for the record that the American Textile Manufacturers Institute is the national trade association representing nearly 75 percent of domestic textile manufacturers located in approximately 30 states. The domestic textile industry is the *largest manufacturing sector of non-durable goods in the United States and contributes more than \$53 billion to America's gross domestic product—an amount larger than that produced by the automotive, petroleum refining and primary metals sectors.* The industry consists of more than 26,000 COMPANIES representing over 2 million jobs or *12 percent of the American workforce.* Textiles are manufactured into electronic components, medical devices, auto parts, home and office furnishings, and, of course, apparel. Presently, the domestic textile industry faces an unprecedented threat from foreign imports, many from countries that have few, if any, environmental concerns or mandates.

Gentlemen, I thank you for your attention and will be happy to entertain any questions.

SIERRA CLUB



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POISON WATER, TOXIC HARBORS: RESTORING
AMERICA'S FAITH IN CLEAN WATER

STATEMENT OF BRETT D. HULSEY

SIERRA CLUB GREAT LAKES PROGRAM DIRECTOR

JULY 1, 1993

ON THE NEED FOR A COMPREHENSIVE PROGRAM TO
CLEAN UP CONTAMINATED SEDIMENTS AND
STOP TOXIC DUMPING

TO RESTORE AMERICA'S RIVERS, WATERSHEDS AND THE
GREAT LAKES

BEFORE THE SUBCOMMITTEE ON CLEAN WATER,
FISHERIES, AND WILDLIFE
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE

CHAired BY THE HONORABLE BOB GRAHAM

ON BEHALF OF THE SIERRA CLUB, CITIZENS FOR A
BETTER ENVIRONMENT, COAST ALLIANCE,
CONTAMINATED SEDIMENTS WORK GROUP,
GREAT LAKES UNITED,
U.S. PUBLIC INTEREST RESEARCH GROUPS,
NATURAL RESOURCES DEFENSE COUNCIL,
THE LAKE MICHIGAN FEDERATION,
AND THE LAKE SUPERIOR ALLIANCE

INTRODUCTION

I would like to thank the committee and the chairman for holding this hearing and for leading the effort to clean up the nation's waters. We thank the committee for your leadership and for taking the bold steps outlined in the Baucus-Chafee bill to deal with sediments, non-point, and toxic pollution.

My name is Brett Hulsey and I am the Sierra Club's Midwest Representative and I direct its Great Lakes Program. I am testifying on behalf of the Sierra Club, the Lake Michigan Federation, Contaminated Sediments Working Group, Citizens for a Better Environment, Great Lakes United, Natural Resources Defense Council, the Coast Alliance, the Lake Superior Alliance, and U.S. PIRG to urge you to enact a comprehensive national program to clean up the toxic sediments that line our harbors and stop additional toxic pollution from sullyng our waters.

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." *John Muir*
National Headquarters: 730 Polk Street, San Francisco, California 94109 (415) 776-2211

This is of top importance to all Americans and especially the millions who belong to these organizations. The Sierra Club's 100,000 members in the Great Lakes region and 600,000 members in U.S. and Canada have made restoring the country's waters and the Great Lakes -- that is making them safe for mothers to drink, and wildlife and fish safe to eat -- a national campaign. The groups endorsing this testimony represent more than 2 million Americans who are dedicated to cleaning our waters and hundreds of local groups that rely on clean water for their jobs and livelihood.

The need for this is clear to those of us living in Wisconsin and witnessing the human tragedy in Milwaukee: This spring more than 200,000 became sick from a water-borne infection spread in the public drinking water. 800,000 people were not able to safely drink the public water. At least six elderly and AIDS patients have died or are critically ill from the contaminated water. Schools and businesses were forced to close and the costs could run in the billions. The public in Wisconsin and much of the country has lost faith in the safety of our water delivery system and we are looking to Congress to restore the nation's waters.

We must address water safety issues in the upcoming Clean Water Act reauthorization to insure that America's waters are safe for drinking, swimming, and fishing.

SUMMARY

The above groups representing more than 200 environment, labor and sports groups, have a comprehensive plan to address contaminated sediments.

1. EPA needs statutory authority to develop a strong national program with deadlines and funding to measure and clean up toxic sediments with strong and practical sediment quality criteria (SQC) so that communities can identify and cleanup toxic sediments in their area. Federal criteria exist for every other major form of pollution. SQC are needed to identify the extent of sediment contamination, to help protect clean areas and promote pollution prevention, to identify critical areas for cleanup, and to determine appropriate methods to manage dredge materials.
2. EPA must develop policies to apply SQC to the states and other programs. States need EPA guidance to apply the SQC to various programs like the NPDES, non-point, ocean and estuarine dumping criteria, and Superfund.
3. EPA should administer a national sediment program to use technologies developed by EPA's Great Lakes (ARCS) program and the Superfund SITES programs to cleanup toxic sites in the Great Lakes and marine sites. This program also needs to test new technologies in critical marine sites in addition to New York/New Jersey harbors which were authorized under section 405 of WRDA of 1992. EPA has bench tested at least five technologies in the Great Lakes but full-scale tests are needed to determine costs and effectiveness before recommendations can be made for full cleanups.
4. Make pollution prevention measures a condition to receive a permit to dispose of contaminated sediments and include pollution and sediment prevention measures in other Clean Water Act programs to reduce further sediment contamination.

5. The EPA/Corps ocean disposal program should be improved since the ocean dumping criteria (as mandated by section 103 of the MPRSA) lack appropriate thresholds to interpret bioaccumulation test results. This program is being run by the EPA regional office and Corps districts and lacks adequate public review and central management. Clarification of roles are needed.
6. Develop a phase-out period for open water dumping of contaminated sediments in sensitive areas like Lake Superior as called for by the International Joint Commission.
7. Strengthen and enact the Metzenbaum/Glenn Omnibus Great Lakes Clean Water Amendments to improve sediment management and cleanup in the Great Lakes. We would like to see more sites included for testing of technologies.
8. Create a funding mechanism to pay for sediment management and clean-up under section 115 of the WPCA or another appropriate section.

S. 1114, MAKING GOOD PROGRESS

The Committee bill, S. 1114, takes several important steps in this direction. We applaud the committee's foresight to give EPA clear authority to release sediment quality criteria (SQC) and set deadlines for 8 chemicals, including PCBs and Dioxin within five years. The PCB and Dioxin standard are particularly important given the current controversies in New York/ New Jersey and Duluth/Superior harbors. But since EPA has five draft criteria pending for release this summer, we feel that they can include up to eight additional chemicals in that five year period once their protocol for doing SQC is established.

We urge the committee to consider our points above in revising the legislation.

TOXIC HARBORS, A NATIONAL PROBLEM

Contaminated sediments -- the toxic muck that settles to the bottom of our rivers, lakes, and harbors -- is a huge national problem. EPA has concluded that it is likely that every major water body in the U.S. has moderate to severe sediments contamination. This issue is also an economic one, since the contamination often makes it difficult or impossible to dredge harbors and maintain shipping as we are seeing in ports like New York/ New Jersey.

The 60 million tons of dredge material that are ocean dumped from these harbors and rivers each year pose a significant challenge to environmentalists and port operators. For an idea of the extent of sediment contamination on the marine coasts, please see the appendix. Table 6-5 shows a list of these sites. Note that Ohio leads the nation with 193 sites clogged with toxics like arsenic, cadmium, and lead. Florida experiences these problems in the Miami River and harbor area also.

Contaminated sediments account for 75% of the PCBs going into Lake Michigan, according to a recent National Wildlife Federation study. They are

also the main source of fish contamination. According to the EPA National Water Quality Inventory, 1988 Report to Congress:

"The main reason for these fishing restrictions is contamination of sediments by toxic chemicals such as priority organics that are, in turn, passed along to macroinvertebrates and fish." (page 35)

In the 1990 Report to Congress, EPA said: "...landfills and contaminated sediments are the leading sources impairing the Great Lakes." (page 39)

There is no clearer example of the national need for this program than in the Great Lakes. Toxic muck clogs all but one of our areas of concern and stifles economic development in many. The Port of Toledo may be forced to close if the U.S. Army Corps of Engineers does not cooperate with the Ohio and U.S. EPA to end the dumping of contaminated dredge spoil in Lake Erie near Toledo and Oregon, Ohio water intakes. The Corps insists that this sediment is not polluted, but the Port of Toledo and all the environmental agencies feel that it is.

I will use the Great Lakes example to illustrate this need because one in ten Americans drink the water and because these are good examples of problems seen everywhere. The appendix has a partial listing of contaminated sites from New Bedford to Chesapeake Bay, to the Gulf Coast, California to Puget Sound, sediments are clogging our harbor, poisoning our fish, and putting maritime jobs at risk.

JOBS AT RISK

The Sierra Club recently released its Clean Lakes, Clean Jobs study that documents the jobs and money at risk if we fail to cleanup the toxic blobs that rest at the bottom of every Great Lakes harbor. Billions of dollars and thousands of jobs are at risk if toxics are not cleaned up (see table).

GREAT LAKES JOBS AT RISK

	JOBS	COSTS
HEALTH	*	\$18.47 Billion
FISHING	89,000	4.0 Billion
SHIPPING	44,000	3.5 Billion
TOURISM	2,760,000**	69.0 Billion
TOTAL	2,893,000	\$94.97 Billion

[* complete data unavailable; ** assumes \$25,000/direct job]

Great Lakes tourism is the most threatened industry. Tourism is a \$69 billion industry in the Great Lakes Basin and the number two industry in several states. In Ohio, Lake Erie recreation industry accounts for \$8.5 billion and 152,000 jobs.

Approximately 89,000 fishing jobs and more than \$4 billion in

commercial and sport fishing proceeds are in jeopardy. There are more restrictions on fish consumption in the Great Lakes than anywhere in the United States, 1,000 of the nation's 1,400 fishing restrictions -- five in seven -- come from Great Lakes states. As the EPA said, these are largely a result of sediment contamination.

Also at risk are more than 44,000 shipping jobs and \$3.5 billion in personal and corporate income, including state and local taxes paid by the ports. Contamination and lack of a national program to deal with this toxic muck prevent safe dredging in half of all Great Lakes harbors where sediments cannot safely be dredged.

Because communities cannot safely dredge this toxic sediment, barges must lightload their cargos an average of 480,000 pounds. This means lost profits and jobs in the millions for the entire Great Lakes Basin.

If you extrapolate these risks to the country at large and three other coasts, the potential job risk could be near 10 million and the commerce at risk could be near \$400 billion. That justifies an aggressive national program to identify and clean these sites. While the price tag for cleaning up all Great Lakes seems expensive -- \$10 billion by some estimates -- the potential of creating 400,000 jobs in depressed areas of the Great Lakes is enormous.

STOP NEW POLLUTION

As other speakers have pointed out, we must also stop new contamination from existing point and non-point sources. Appendix table I-2 shows the persistent toxic levels of PCBs in coho salmon in all the Great Lakes. These levels are over 70 times EPA's 1/100,000 cancer risk level and may cause over 38 thousand cancers cases each year according to EPA estimates. This shows that toxic levels remain high in the Great Lakes despite years of point source controls.

According to the EPA National Water Quality Inventory, 1990 Report to Congress, 67.7% or two-thirds of Great Lakes shoreline does not support Clean Water Act designated uses. Only 85 miles -- less than 1 in 50 -- fully support Clean Water Act designated uses for fishing and swimming. None of the shoreline in Wisconsin, Illinois, Indiana, Michigan, and Ohio supports full Clean Water Act designations.

The current clean water law allows toxic chemical discharge into the nation's waters and the Great Lakes ecosystem which cause these impairments. These laws -- especially the Clean Water Act -- allow polluters to dilute and mix toxics in the air and water. The only way to make the Great Lakes safe for drinking, fishing, and swimming is to phase out the release of these toxic substances into the U.S. water and the Great Lakes to achieve Zero Discharge. We encourage the committee to take tougher measures to eliminate mixing zones than are in the Baucus-Chafee bill.

Current law allows states to dump vastly different quantities of toxic material into their waterways.

To put this in perspective, the Exxon Valdez illegally dumped 11 million gallons of oil into Alaska waters and was fined about \$1 billion. Each year, U.S. industries dump two-thirds that amount into the Great Lakes water supply for 25 million Americans.

Uncontrolled toxic dumping is a national problem also. Conservative estimates taken from the 1990 Toxic Release Inventory (TRI) data (which do not cover all industrial sources) showed that industry dumped nearly 200 million pounds of toxic and hazardous material into U.S. waterways. In addition, manufacturing industries dumped 448 million pounds of toxic materials in 1990, and washed another 254 million pounds down the drain.

Scientific evidence shows that widespread, low-level exposure to some persistent toxic chemicals like PCBs, Dioxin, and mercury will:

- threaten newborn children with premature birth, low birth weights, and impaired learning loss of up to 5 IQ points;

- cause 38,255 cancers to fishers and non-fishers in the Great Lakes basin, according to EPA Risk Analysis of 26 Environmental Problems, Draft Working Documents, page 4;

- cause birth defects, sterility, and population decline in fish and wildlife like bald eagles, lake trout, cormorants, and mink;

- make lake trout, salmon, and other species unsafe to eat in all the Great Lakes because they can cause health problems and increase cancer risks; and

- remain in the lake ecosystem, concentrating in and damaging humans and wildlife for decades.

Current U.S. and state environmental laws allow polluters to dump toxic chemicals into aquatic ecosystems which poison the food web. According to a recent International Joint Commission study, Great Lakes states now use a hodgepodge of regulations that allow dumping of persistent poisons. For example, a plant that could only dump 4 pounds of mercury into Wisconsin waters would be allowed to dump 55 pounds in Ohio, 99 pounds of mercury in Illinois, and 323 pounds in New York.

NEW YORK	WISCONSIN	OHIO	ILLINOIS
323	4	55	99
MERCURY DUMPED			
(IN POUNDS)			

The Control of Discharge of Toxic Pollutants into the Great Lakes and their Tributaries: Development of Benchmarks, Jeffrey A. Foran, PhD., International Joint Commission, page 39.

Clearly, this jeopardizes more than the water quality, fish eaters, and wildlife. It puts industries of the clean states at an unfair competitive disadvantage. States compete for industry by jeopardizing their water supply rather than strengthening their workforce. We are promoting uniform, water

quality standards that protect jobs, people, fish, and wildlife.

This is indicated by the ubiquitous fish advisories throughout the country. As you can see from Figure 6-1 in the appendix, the Great Lakes states have the greatest number of fish advisories in the nation.

We urge the committee to study the approach taken in EPA's new Great Lakes Water Quality Guidance to create a level playing field. This Guidance is called for in Section 118 of the 1987 amendments to the Water Pollution Control Act and the 1990 Great Lakes Critical Programs Act. The document recently released by EPA would require states, in their next triennial review, to:

--Establish minimum water quality standards to protect human, wildlife, and fish health;

--Target the worst pollutants -- those that bioaccumulate the most like PCBs and Dioxin -- in people, fish, and wildlife;

--Prohibit the use of mixing zones for these chemicals of concern;

--Include provisions to keep clean waters, like Lake Superior, clean by making Lake Superior an Outstanding Natural Resource Water. This would create one place where Zero Discharge of persistent toxics could be demonstrated as called for in the original Water Pollution Control Act, the Great Lakes Water Quality Agreement and recommended by the International Joint Commission; and

--Protect inland rivers and lakes, in addition to the Great Lakes, if the state chose.

CURRENT EPA EFFORTS

To help solve this problem, EPA plans to release draft criteria for five sediment contaminants this summer, but clearly the progress is too slow. With current staff and funding, the EPA will not have sediment criteria for all the IJC Critical Pollutants List until the middle of the next century. The public will not accept this slow response to our worst contamination problem.

We have several successful programs to address Great Lakes sediment pollution, like the Assessment and Remediation of Contaminated Sediments (ARCS) Program, set up under Section 118 of the 1987 Clean Water Act Amendments and the Great Lakes Critical Programs Act. These provide key demonstration programs and deadlines to test technologies and complete the Remedial Action Plans (RAPs).

As a member of the ARCS Citizen Work Group, I can report some progress on this program -- five pilot treatments were tested last summer with some promising results. In the laboratory, over 10 technologies were tested. ARCS also did five in-depth contaminant assessments from Buffalo, Ashtabula, Saginaw, Indiana Harbor, and Sheyboygan harbors. But these plans and tests are only that. We need a concrete program to clean up these 27 toxic Great Lakes hotspots and many others in ports around the country.

The Clean Water Act reauthorization presents a perfect opportunity to make additional progress in the Lakes and make the fish safe to eat. Over the past three years, Great Lakes and coastal advocates have worked with the ports, EPA, and Army Corps of Engineers to draw up a national program to deal with these underwater toxic sites.

CONCLUSION

In conclusion, this year's Clean Water Act reauthorization gives us the opportunity to stop additional persistent toxics from entering the waters of the United States and to clean up the current toxic hotspots. We urge this committee to be bold and meet the challenge to make this happen.

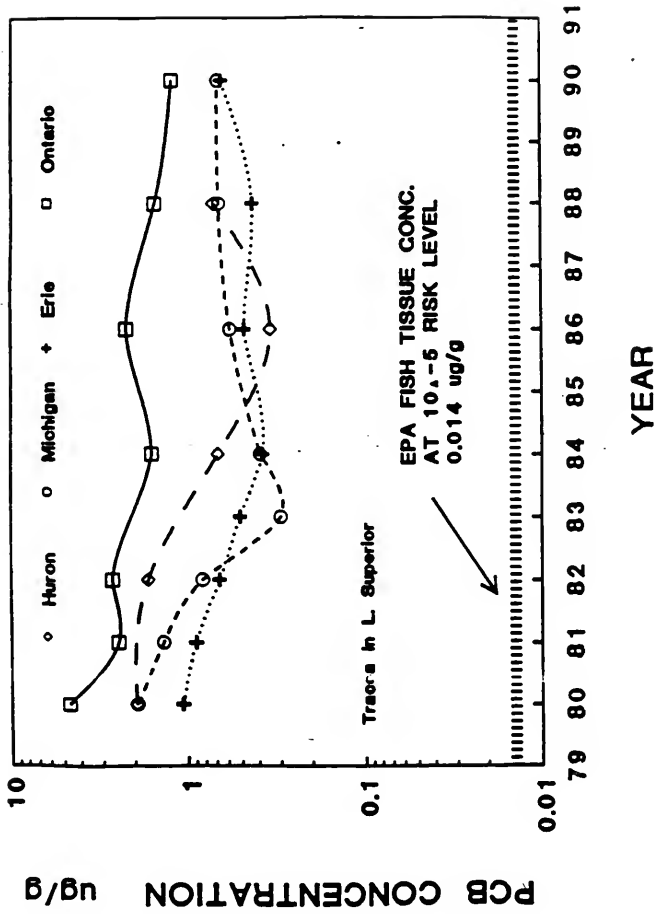
We are especially concerned that you:

- Protect women and children from toxic chemicals that accumulate in fish and cause birth defects;
- Restore the toxic harbors of the nation and protect the jobs at risk;
- Protect people who eat the most Great Lakes fish, like sport anglers, Native Americans, and others who fish for their food;
- Protect fish and wildlife from all chemicals that cause birth defects and deformities; and
- Keep high-quality waters like Lake Superior clean.

Thank you.

APPENDIX INCLUDES:

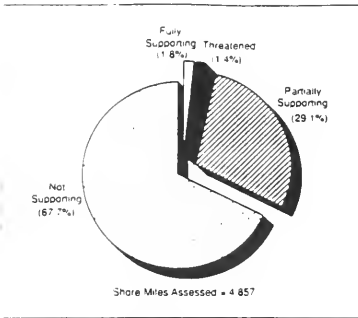
PCB Concentration in Coho Salmon from the Great Lakes, From EPA GLWQG; EPA National Water Quality Inventory, 1990 Report to Congress tables; Table on Sediment Contamination by state from same Federal Water Pollution Control Act of 1987, section 104 and 118 Examples of Marine Contaminated Sediment Sites; Outline of Metzenbaum/Glenn Omnibus Great Lakes Clean Water Amendments.

Figure I-2: PCB concentration in coho salmon ($\mu\text{g/g}$).

Source: DeVault et al., 1988; DeVault, 1993b.

Great Lakes Water Quality Guidance. Unofficial Preliminary Copy, March 31, 1993

These are taken from the EPA National Water Quality Inventory, 1990 Report to Congress



Source: 1990 State Section 305(b) reports

Figure 3-1. Designated Use Support in Assessed Great Lakes

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Table 6-3. Pollutants Associated with Fishing Restrictions

Pollutant	Number of States Reporting
PCBs	30
Pesticides	23
Dioxin	16
Mercury	6
Organics	8
Metals	5

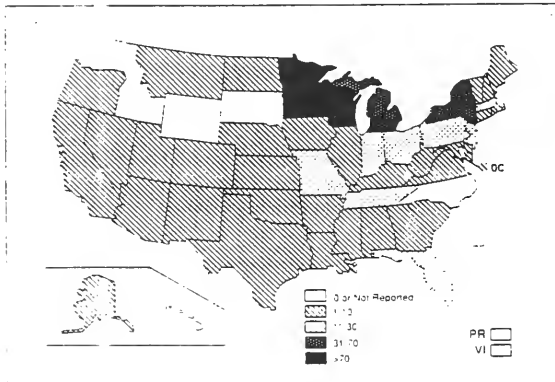
Source: 1990 State Section 305(b) reports

Table 6-4. Sources Associated with Fishing Restrictions

Source	Number of States Reporting
Industrial	12
Urban Runoff/Storm Sewers	8
Agriculture	4
Resource Extraction	4

Source: 1990 State Section 305(b) reports

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Source: 1990 State section 305(b) reports

Figure 6-1 Number of Fish Consumption Restrictions Nationwide

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This is taken from EPA National Water Quality Inventory, 1990 Report to Congress, page 96

Table 6-5. Sediment Contamination Reported by States

State	Number of Sites	Contaminants Identified
Alaska	1	Aromatic hydrocarbons
Arizona	6	Pesticides, metals (boron, chromium, selenium), radiochemicals
California	1	Mercury
Connecticut	6	Lead, polychlorinated biphenyls (PCBs), organic chemicals, and other metals
Delaware	2	Metals
DC	—	Lead, cadmium, zinc, chlordane, DDT
Florida	—	—
Hawaii	1	Arsenic
Illinois	—	Heavy metals, DDT, PCBs, heptachlor epoxide
Indiana	8	Metals, polynuclear aromatic hydrocarbons (PAHs), cyanide, other organics
Iowa	1	PCBs
Kentucky	1	PCBs
Louisiana	7	Priority organics, creosote, metals, oil and grease, PCBs
Maine	7	Dimethyl formamide, toluene, trichloroethane, chlorinated solvents, tris (2,3-dibromopropyl) phosphate, PCBs, copper, cadmium
Maryland	—	Nickel, zinc, PAHs, non-DDT chlorinated pesticides, pesticides, DDT, PCBs and other metals
Massachusetts	13	Metals, priority organics, oil and grease
Michigan	13	Mercury, alkylated lead, PCBs, dioxin, benzo(a)pyrene, hexachlorobenzene [HCB], DDT, dieldrin, toxaphene, mirex
Minnesota	1	Mercury, PCBs, coal tars
Nevada	7	Mercury and other metals
New York	21	Priority organics, metals, pesticides
Ohio	193	Arsenic, cadmium, chromium, copper, lead, zinc
Oklahoma	10	Mercury, lead, zinc, chlordane, hydrocarbons, PCBs
Oregon	14	Arsenic, cadmium, chromium, copper, lead, nickel, zinc, DDT, PAHs, PCBs, phthalates, cyanide, volatile organic compounds, phenanthrene, pentachlorophenol
Rhode Island	—	—
South Carolina	2	PCBs, chromium, mercury
South Dakota	4	Mercury
Virginia	31	Selenium, chromium, arsenic, iron, manganese, nickel, cadmium, zinc, copper, mercury, lead
Virgin Islands	10	Mercury, copper, selenium, cadmium, nickel, zinc
Wisconsin	24	PCBs, dioxin, mercury, pentachlorophenol, arsenic, cadmium, chromium, zinc, oil and grease, pesticides, PAHs
Total	384	

— Not reported.

Source: 1990 State Section 305(b) reports.

MAJOR PROVISIONS OF THE "GREAT LAKES CLEAN WATER AMENDMENTS
OF 1993"

1. SEDIMENT MANAGEMENT - PROVIDES EPA WITH CONCURRENCE AUTHORITY OVER SEDIMENT DREDGING AND DISPOSAL PRACTICES IN THE GREAT LAKES. IT WILL ALSO REQUIRE MANAGEMENT PLANS FOR THE REGION'S CONFINED DISPOSAL FACILITIES INCLUDING PLANS FOR REMEDIATION AND POST-CLOSURE CARE.
2. SEDIMENT REDUCTION - REQUIRES THE CORPS OF ENGINEERS TO MEASURE SEDIMENT LOADINGS INTO THE MAJOR RIVER SYSTEMS FEEDING GREAT LAKES HARBORS AND TOXIC HOT SPOTS. IN ADDITION, PROVIDES STATES GRANT MONEY TO EXPLORE AND DEMONSTRATE BEST MANAGEMENT PRACTICES TO REDUCE EROSION THAT RESULTS IN SEDIMENTATION OF HARBORS, CHANNEL MAINTENANCE PROJECT SITES AND TOXIC HOT SPOTS AROUND THE LAKES.
3. SEDIMENT CLEANUP - REAUTHORIZES THE CLEAN WATER ACT'S EXPIRED ASSESSMENT AND REMEDIATION OF CONTAMINATED SEDIMENTS PROGRAM (ARCS) WHICH PROVIDED FOR PILOT SCALE TESTING OF SEDIMENT CLEANUP TECHNOLOGIES. THIS PROVISION WILL REQUIRE FIVE FULL SCALE TECHNOLOGY DEMONSTRATIONS, AND REQUIRE ASSESSMENTS OF SEDIMENT CONTAMINATION AT ALL OTHER TOXIC HOT SPOTS IDENTIFIED IN THE GREAT LAKES.
4. POLLUTION PREVENTION - PROVIDES INCENTIVES TO INDUSTRY (WAIVER OF EFFLUENT GUIDELINE FEE AND ONE YEAR COMPLIANCE DELAY FOR NEW EFFLUENT STANDARDS) FOR INSTALLING POLLUTION PREVENTION TECHNOLOGIES. ALSO PROVIDES TECHNICAL ASSISTANCE TO MUNICIPALITIES IN THE GREAT LAKES BASIN TO HELP THEM REDUCE TOXIC POLLUTANTS IN URBAN RUNOFF.
5. ENVIRONMENTAL RESEARCH - ESTABLISHES A GREAT LAKES RESEARCH COUNCIL TO INCLUDE EPA, THE FISH AND WILDLIFE SERVICE, NOAA, THE COAST GUARD, THE INTERNATIONAL JOINT COMMISSION AND EACH GREAT LAKES STATE TO HELP COORDINATE ON-GOING RESEARCH ACTIVITIES IN THE REGION.
6. LAKEWIDE MANAGEMENT PLANS - SETS DEADLINES FOR EPA ACTION ON DEVELOPING FIVE LAKEWIDE PLANS SETTING OUT LONG-TERM, COMPREHENSIVE STRATEGIES FOR RESTORING, PROTECTING AND MAINTAINING HIGH QUALITY WATERS.
7. ENFORCEMENT - PENALTIES FROM GREAT LAKES SPECIFIC CLEAN WATER VIOLATIONS WILL BE DEPOSITED IN A REVOLVING FUND AND MONIES FROM THE FUND WILL, TO THE EXTENT PRACTICABLE, BE USED TO SUPPLEMENT AND SUPPORT PLANS, PROGRAMS AND PROJECTS TO BENEFIT THE WATER QUALITY OF THE GREAT LAKES.

STATEMENT BY FRANK H. HACKMANN,¹ U.S. CHAMBER OF COMMERCE

The U.S. Chamber of Commerce appreciates this opportunity to offer its perspective on S. 1114, the proposed reauthorization of the Clean Water Act of 1987 (Act).

There has been great progress in cleaning the streams and rivers of the country over the last twenty years. Because of this progress, the Chamber believes that major revisions to the Act are not needed. This testimony will, however, encourage marginal, needed changes in keeping with the history of federal legislation and enforcement in this area.

An appropriate historical perspective is invaluable when addressing issues as fundamental to the environmental, social, and economic future of America as those addressed in the Act. The extension of federal regulation to maintaining clean water is generally considered to have begun with the nearly unanimous passage of the Federal Water Pollution Control Act of 1972, although the roots reach back to the 1899 Refuse Act.

The 1972 Act set forth some basic principles which remain the guiding lights today.

- Any discharge to the waters of the United States is unlawful unless expressly permitted (or otherwise exempted).
- Permits issued to dischargers shall state with detail the permissible discharge components and concentrations, with violators being subject to both civil and criminal prosecution, as well as citizen suits.
- All discharges are generally required to use a specified level of control technology, whether or not that technology is necessary to meet receiving water quality.
- Dischargers can also be made to provide tighter levels of treatment in order to meet applicable receiving water quality standards.
- There is a major federal funding rule to assist municipalities in discharging their obligations under the law, although the lack of federal funds is itself not a defense to noncompliance.
- Specified areas of concern, such as nonpoint source pollution and area-wide watershed issues, are dealt with in a somewhat different fashion—but are addressed in a manner that was acceptable to Congress.
- Different standards are needed for the so-called conventional pollutants and the so-called toxic pollutants, with appropriate standards for each.
- Water pollution control laws need to be coordinated with the remainder of the federal regulatory scheme on issues such as on-land sludge disposal, sludge incineration, etc.

In general, over the years the Chamber has supported these basic concepts, although it has disagreed, sometimes strongly, with specific items or amendments. Often this disagreement was over the means to reach the goals, rather than the goals themselves.

These principles are especially relevant to issues impacting small businesses and their compliance efforts, and should be used as a guide in developing further changes to the Clean Water Act. As much as possible, regulatory guidance should be clear and comprehensible, so that the regulated community understands what is expected, why it is expected, and how it can be done in the real-world context of a business operation.

Overall, the Chamber believes the Clean Water Act has worked reasonably well, especially as compared to some other programs. While the Act is far from perfect, it does seem to be fairly well understood and well accepted in the business community. Because of improved measurements, such as the ability to detect parts-per-billion of contaminants in water, there is a misconception that water quality is deteriorating. More than 75 percent of the nation's lakes, rivers and streams meet strict water quality standards based on their intended use. As Congress begins the reauthorization process, it should not overlook the considerable improvements in water quality achieved under existing law. Many of the new water quality requirements under the 1987 amendments have just begun to take effect, while others are still being implemented.

SELECTED SPECIFIC ISSUES WITHIN S. 1114, REAUTHORIZATION OF THE CLEAN WATER ACT

The major concerns business and industry have about the Act reflect issues such as effluent guidelines, pretreatment requirements, further implementation of water

¹ Partner, Sonnenschein, Nath and Rosenthal, and former Chairman, U.S. Chamber of Commerce Water Quality Subcommittee.

quality standards, and the apparent use in evaluating risks of placing one conservative assumption upon another resulting in significant overstatements of risks.

As noted, the Act clearly has made our waterways cleaner and our environment better. However, disruption or drastic changes in the basic framework of the statute would only cause further delays in the progress being made.

Toxic Control

To control the discharge of toxic substances, S. 1114 would simply ban their discharge. This concept is not wise public policy. While a "no discharge standard" may have superficial political appeal, it is often technologically or economically impractical or even unworkable, and even if complied with may not provide a net overall benefit. A more appropriate and realistic public policy will acknowledge the efficacy of treatment technologies and the relative effects of various contaminants when discharged into different media, and seek to minimum any negative environmental effects. This must be done without losing sight of other national goals, including economic factors.

Bans or restrictions on the use or production of materials without a determination of unreasonable risk to health and environment, consideration of the magnitude of exposure, societal benefits and economic consequences, are contrary to the Pollution Prevention Act of 1990. The Industry innovations, voluntary efforts and market-based incentives are more effective ways to attain environmental protection and making progress in finding optimal solutions for reducing discharges to our nation's waters.

Pollution Prevention

While the Chamber strongly endorses the overall concept of pollution prevention and waste minimization as integral parts of industrial operations, it is opposed to specific statutory mandates proposed by S. 1114. The reason is that our past experience with a variety of environmental laws has shown the difficulty of translating specific numerical statutory goals into reality at the level of an operating plant. Clearly the statutes should encourage the EPA and industry to move forward in efforts to make sensible, further reductions in pollution. However, the costs, both economic and social, associated with such decisions cannot and should not be ignored by Congress. Industry innovation, voluntary efforts and market-based incentives are more effective ways to attain environmental improvements and protection than is legislative prescription.

Pretreatment

The Chamber is concerned about the pretreatment provisions of S. 1114 because the vast majority of our members send their effluent to POTWs. Adequate mechanisms already exist to provide control over hazardous materials and toxics from industrial sources and a new round of pretreatment requirements will only result in regulatory overkill. Additional pretreatment controls and restrictions on the domestic sewage exemption, will have three major adverse consequences with no corresponding environmental benefit:

- proliferation of small on-site "pretreatment" plants, each of which would be added to the NPDES permit system, at least in some fashion;
- a corresponding increase in the universe of hazardous waste generators, because any on-site treatment residuals or users affected by loss of the "Domestic Sewage Exemption" who would therefore become subject to the RCRA system; and
- dilution of enforcement effort by converting centralized treatment plants which can be assessed and monitored relatively efficiently, into a larger and much harder-to-track universe of regulated sources.

Removal Credits

The Chamber supports the continued use of removal credits for chemicals with categorical pretreatment standards consistent with the current legal framework regulating a municipality's use and operation of its sewage system. We recognize there is a significant potential problem related to sewage sludge disposal; there is an interrelationship between sewage sludge disposal regulations and removal credits regarding toxic material levels. However, it is not necessarily more advantageous to force users away from heavy reliance on large, central publicly owned treatment works for their treatment needs. Increasing the number of small pretreatment facilities, particularly at smaller industries, in an effort to meet unreasonably stringent sewage sludge disposal regulations may not represent the best overall environmental outcome. For example, multiplying the number of regulatory sources of con-

cerns could strain the enforcement mechanism. Thus, while we understand the tension between the removal credit and sewage sludge disposal issues, we caution against setting sewage sludge standard so stringent that many types of common and historically acceptable industrial dischargers would face difficulty with continued sewer use while providing a traditional level of pretreatment.

Compliance Should Be Made Easier, Not Harder

One major concern of the Chamber is that many portions of the EPA programs, laws and regulations are nearly incomprehensible to the practicing professionals, and even more so to the small businessman or small manufacturer where the bulk of America's jobs, and job growth, reside. In addition, regulations under the different statutory authorities are not coordinated, creating conflict and duplication. A number of the so-called toxic and nonconventional pollutants are ubiquitous materials found nearly everywhere in our society. Therefore, further regulations of these materials will vastly increase the number of regulated indirect users, diffuse the enforcement ease with which significant problems can be identified and handled, and create the potential for less, not more, environmental protection.

Sound Science

The Chamber supports the use of credible science and economic considerations in setting, revising, and implementing discharge permits and related standards.

Occasionally, the EPA will determine that a different technology standard or permit limits should apply when a permit is renewed. If what otherwise appears to be a "weaker" standard is nonetheless based on sound science and applicable regulations, sound public policy is not served by refusing to acknowledge the new facts, situations, standards, and regulations.

A National Pollutant Discharge Elimination System (NPDES) permit should be able to be modified upward, just as it can now be modified downward. There is no reason to be forever shackled to past understanding, errors, or good-Faith misjudgments in issuing and reviewing permits.

Summary

Government should not make it unnecessarily difficult for the regulated community to do what is desired. The Chamber believes that the basic structure of the Clean Water Act is working well, and that no radical changes are necessary or appropriate. Progress has been made in cleaning up and managing our water resources, and we do not dispute that more needs to be done to solve the remaining problems. To meet these challenges in a cost-effective and equitable way, Congress should consider the following criteria as part of the reauthorization effort:

- sound science and economic considerations as the basis for discharge limits and cleanup priorities;
- equitable and flexible regulations, where needed, for all sources;
- recognition, within state and local water-quality standard determinations, of the need for economic growth; and
- limitation of permit-application costs, monitoring requirements, and paperwork burdens.

The Chamber looks forward to working with committee staff as Congress deliberates the reauthorization of the Clean Water Act. A consistent approach, with a view toward pursuing a broad public policy designed to further a variety of national goals, both environmental and economic, will greatly contribute to the nation's ability to compete effectively in the domestic and international marketplace while making continued improvements in our water resources.

WRITTEN TESTIMONY OF DR. MORGAN REES, DEPUTY ASSISTANT SECRETARY (PLANNING POLICY AND LEGISLATION)

INTRODUCTION

Due to the short notice of the request to present testimony at the July 1, 1993 hearing on toxic pollutants held as one in a series on the reauthorization of the Clean Water Act, the Subcommittee agreed that Army could present written testimony subsequent to the hearing. This statement presents Army positions on Title II of S. 1114 concerning the issue of contaminated sediments, which is the topic Army was requested to address at the hearing. Thank you for the opportunity to present this written statement for the record.

There are several policy and management concepts embodied in Title II of S. 1114 which Army fully supports. They are cross media management of pollutants, management and regulation of pollutants based on validated science and technology, prioritization of actions based on relative risk assessment, and pollution prevention. My testimony will address each of these in turn.

CROSS MEDIA ANALYSIS

The Army civil works program is operated by the Army Corps of Engineers (Corps). The program involves responsibility for dredging and disposal of dredged material from Federal navigation channels and harbors which is crucial to the economic health of interstate and international commerce. Dredged material occasionally contains contaminants. We have found throughout our years of attempting to manage this program, that sometimes these contaminants are a result of marine operations such as fuel leaks, overboard discharges, or hull cleanings. But far more often, the contaminants originate upland and are unrelated to commercial navigation activities. Nevertheless, when it comes time to dredge and dispose of the material, the Corps and port and shipping interests are faced with the very difficult task of solving the pollution problem caused by others.

Potential solutions to the problem are made all the more difficult by fragmentation and sub-optimization of existing regulatory schemes. For example, in following the requirements of the National Environmental Policy Act (NEPA), the Corps evaluates all reasonable alternatives. Upon completion of that analysis, a disposal method is selected and approval sought from the regulatory agency responsible for that particular medium. Separate agencies and separate programs exist for land, air, and water disposal options. We frequently find that one agency will say, "not in our medium, go look somewhere else." The next agency will say the same, and the one after that will have the same response. The bottom line is that no disposal option is acceptable, yet the alternative of closing down the major ports and harbors by not dredging is equally unacceptable. One way to break out of this circle is to require regulatory agencies to look at all media on an equal footing, as required by NEPA, and to require the regulatory agencies to organize themselves along lines which allow and promote this cross media analysis philosophy.

Two points addressed in S. 1114 which also bear on this concept are that measures must be economically achievable and criteria for one medium must reflect criteria for other media. For example, we have situations where discharges from upland dredged material containment facilities into water were allowed and dredging the same material from that water body and placing it elsewhere in the water was disallowed. This makes no sense scientifically and is singularly inequitable to the party who has to do the dredging.

Over the past several years the Corps and the Environmental Protection Agency (EPA) have been developing a technical framework for determining the environmental acceptability of dredged material disposal alternatives. That framework was published jointly by the Corps and EPA in November of 1992 as a technical framework manual entitled "Evaluating Environmental Effects of Dredged Material Management Alternatives." That manual addresses full consideration of all practicable alternatives on an equal basis for both clean and contaminated sediments and fully incorporates the cross media concept. Any legislation which directs how contaminated sediments are to be managed must be consistent with the cross media approach.

SCIENTIFIC BASIS

The proposed statute should build on a risk based approach to environmental management to include effects based testing and cross media assessment. It should include the notion that we do not know everything about everything and we must operate within the science and technology we have today. Two regulatory techniques of Title II of S. 1114 bear directly on this point: sediment quality criteria and mixing zone limitations. Both techniques seem to be based on an assumption that the water would be off limits for certain material and the material would have to be disposed of elsewhere. In one sense, this runs counter to the cross media analytic approach discussed earlier. More significantly, the Corps believes either technique has a limited scientific basis in the context of this bill. We believe strongly that any management or regulatory techniques must have valid scientific bases for adoption. Listed below are discussions on sediment quality criteria and mixing zones. In addition there are discussions on the Corps dredged material research and development and beneficial uses programs.

Sediment quality criteria. Recently, there has been some interest in developing chemical-specific numeric sediment quality criteria for sediments. These numeric criteria would serve a number of purposes. Potentially they could be used to direct

how dredged material would be tested and managed and would possibly serve as state standards. Adopting numerical criteria would appear to simplify the testing and decision making process and afford an acceptable level of environmental protection. Unfortunately, the chemical-specific approach to sediment quality criteria should not be the only tool in evaluating contaminated sediments that the Corps would dredge or regulate. The sediments the Corps deals with and the ecological evaluation of the disposal alternatives are far too complex to rely totally on this approach. Because of the environmental situations we face in the disposal of dredged material (e.g. confined and nonconfined land disposal, wetlands placement, and dispersed aquatic placement), the Corps believes that it is beyond current technical capability to develop chemical specific numeric sediment quality criteria which accurately and consistently predict the effects of contaminated sediments. Simply, knowing the concentration of a chemical in a contaminated sediment does not measure its mobility, toxicity, and bioavailability in a complex sediment matrix. Furthermore, it will not allow prediction of its effects on human health and the environment under the range of conditions found in navigation channels and disposal alternatives. The presence of other contaminants, the particular sediment matrix, and the various environmental receptors all interact to affect the pollutant's bioavailability and impact. Many of these interactions cannot be quantified by a simple chemical-specific numeric approach. Consequently, the Corps and EPA developed an effects-based testing approach for the national dredging program, using a broad array of tests and a preponderance of evidence to reach management decisions. This is a demonstrated and scientifically defensible approach that can effectively be applied in regulatory and Federal project decision-making. This effects based approach was initiated in 1974 and has evolved and improved over two decades through implementation in the Marine Protection, Research, and Sanctuaries Acts and Clean Water Act programs. This effects based testing protocol has been subjected to numerous refinements over the years. The current effects based testing program is advancing the state-of-the-science with research into chronic/sublethal and genotoxic effects of contaminated sediments and continues to progress as our analytical procedures are refined and detection limits are lowered.

Development of a new proposed sediment quality criteria testing and regulatory protocol must continue to be subjected to appropriate peer review, scrutiny and scientific validation as was effects based testing. We must also clearly articulate what role sediment quality criteria will have in the overall regulatory scheme. Will sediment quality criteria become pass/fail standards, as some have advocated, or will they replace the existing effects based testing program that has been developed jointly by the Corps and the EPA over the past twenty years? The Corps and the EPA agree that sediment criteria should not be thus used. On numerous occasions the Corps has stated its support for development of sediment quality criteria if those criteria would be used as a screen for effects based testing. Because dredged material is a complex substance with many potential contaminants, the few criteria currently proposed (8) would still require the effects-based toxicity testing approach.

In a November 5, 1992, review of sediment quality criteria by the EPA's Science Advisory Board, a number of recommendations were made. The Corps supports those recommendations, including the need for research into uncertainties associated with the equilibrium partitioning based predictions, verification of field effects and the recommendation that the criteria not be used as stand alone pass/fail values for all applications. The Corps also supports the Board's recommendation that EPA prepare a users manual for derivation and application of sediment quality criteria.

Our technical expertise in evaluating and managing sediments from navigation channels, including highly contaminated sediments, parallels development of much of the environmental legislation of the 1970's to the present. We believe that the Corps can provide valuable experience and expertise in the evaluation and implementation of sediment quality criteria. We seek formal recognition of a Corps role in the development and implementation of sediment quality criteria, much as we have had in the development of the currently used effects-based approach. I might add that the Corps and EPA currently share technical guidance development and implementation responsibilities under the Clean Water and Marine Protection, Research, and Sanctuaries Acts.

Mixing zones. Research and field monitoring have shown that aquatic disposal sites have a significant assimilative capacity for dredged material discharges. Since dredged material is predominately natural sedimentary soil material that presently exists in any water body, aquatic alternatives are not only an environmentally safe form of disposal, but preferred alternatives in many cases. An important management tool at aquatic disposal sites is the use of a mixing zone that will allow for

some minor impact within the zone and no impact outside the zone within a given water body. The mixing zone is designed and located to protect sensitive aquatic areas and recognizes that there are locations within a water body that can assimilate the discharge with minimal short term and no long term impact. The use of a mixing zone emphasizes water column protection; where proper disposal site selection places major emphasis on bottom impacts but includes the water column. Consequently, use of an appropriate mixing zone and proper site selection must be retained as a regulatory tool that will result in minimal impact to aquatic resources and an acceptable disposal decision.

Research and development. Over the past twenty years, research has played a vital role in the identification of environmentally appropriate dredged material disposal alternatives. Research has involved all facets of sediment management from beneficial uses such as wetlands establishment, design of contained disposal facilities to toxicology of contaminated sediments. The Corps Congressionally mandated research provides the scientific basis of our work with the EPA to classify sediments according to contamination potential and to regulate dredged material in a cost-effective and environmentally responsible manner. Research is playing an important role in determining the effects of low doses of contaminants from dredged material disposal on organisms over a long period of time. Research is also helping us to reduce the cost of evaluating dredged material contaminant characteristics by identifying less expensive yet equally sensitive tests. Our research on the use of biomarkers to determine the presence of dioxin in sediments could reduce the cost of the analysis from over \$2,000 per sample to less than \$200. Research has also played important roles in determining potential contaminant pathways, bioaccumulation potential, leachate pathways from upland disposal areas, and potential impacts to endangered species, to name just a few examples. The ultimate objective of our research is to provide sound scientific information to help decision makers make more informed and scientifically based decisions.

Beneficial uses of dredged material. Army has informally employed the concept of beneficial uses of dredged material within its dredging program for many years, and as formal policy since at least 1968. A recent Office of Technology Assessment study reported that about 95 percent of the sediments dredged from coastal waters each year (about 150 million cubic yards) are considered suitable under Federal environmental criteria for a wide range of beneficial disposal options.

Army authority for beneficial uses of dredged material was originally limited to projects incidental to maintenance or construction and where there was no increase in cost to the Federal project or where the local sponsor would pay the incremental increased cost. The Corps received further authority for beneficial uses of dredged material for placement of material on beaches under Section 145 of the Water Resources Development Act of 1976, as amended. This authority, justified primarily as hurricane and storm damage reduction, requires 50-50 cost-sharing of incremental costs, and that the beach be public. Section 1135 of the Water Resources Development Act of 1986 provides further authority for dredged material beneficial uses. Finally, based on an initiative from Army, Section 204 was included in the Water Resources Development Act of 1992. It allows the Army to participate in projects to use dredged material for aquatic habitat and wetland creation, restoration, and protection. The initial project cost must be shared 75% Federal and 25% non-Federal. Any operation, maintenance, replacement and rehabilitation costs are 100% non-Federal. The authority is applicable to the construction, operation, or maintenance of an authorized Federal navigation project. There is a \$15 million annual appropriation limit on the authority, and the President's budget includes \$3 million for the program in Fiscal Year 1994. The Army and EPA have been working with interested states and others to address some of the issues associated with beneficial uses of dredged material.

Traditional beneficial uses would include habitat development (wetland and upland); beach nourishment; strip mine reclamation and solid waste landfill cover; shoreline stabilization and erosion control; and construction aggregate and industrial use. More recent efforts have expanded the beneficial use concept to include capping of contaminated material outside the navigation channel with clean material dredged in a nearby Federal or permitted project.

Presently, research activities concerned with the beneficial use concept are examining the possibility of using at least marginally contaminated dredged material for wetlands habitat development. This effort is being carried out in the Times Beach confined disposal facility at Buffalo, NY and at the Corps/EPA field verification site at Bridgeport, CT. Both sites are currently being evaluated to document migration of contaminants into biota. While wetland plants do not appear to be contaminated on these sites, the animals do. This use appears to be a viable technology. However,

the level and type of contamination need to be defined. Further demonstration should be conducted prior to widespread application.

PRIORITIES SET BASED ON RELATIVE RISK ASSESSMENT

All activities surrounding disposal of dredged material testing and impact evaluation are costly and time consuming. That is not to imply we should do any less or be any less vigilant than we now are. But in our experience, we continue to examine impacts at a level of detail that does not contribute to improvement of the environment or enhance our decision-making ability. We believe strongly that testing and evaluation practices and disposal management practices must be geared to the level of risk involved. The less time and money we spend chasing insignificant details is that much more time and money available to examine many of the remaining significant environmental problems of project activities.

POLLUTION PREVENTION

As alluded to in the discussion of cross media analysis, the maritime industry is saddled with the problem of resolving many pollution issues caused by others. It is indeed difficult to understand how such an inequity exists. If pollutants discharged from upland sources are so undesirable in the water and aquatic sediments, they should be stopped at the source. Alternatively, if the discharge from a permitted upland source is meeting the applicable standards, but special handling is required for disposal of dredged material rendered undesirable by this permitted source, it seems the originator of the pollution has some continuing responsibility to pay special handling costs to dispose of the dredged material. Army supports the provision in S. 1114 on pollution prevention planning.

CONCLUSION

In conclusion, I would like to reemphasize that Army supports the management and policy concepts of cross media management of pollutants, management and regulation of pollutants based on validated science and technology, prioritization of actions based on relative risk assessment, and pollution prevention, all of which are embodied in Title II of S. 1114. Enactment of these measures will assist Army to fulfill its mission of maintaining the economically important Federal navigation channels and harbors in an environmentally responsible manner.

STATEMENT OF JAMES R. BATCHELDER, VICE PRESIDENT, ENVIRONMENTAL AFFAIRS AND TECHNICAL SERVICES, KOPPERS INDUSTRIES, INC.

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to present the views of the American Wood Preservers Institute (AWPI) on S. 1114, the Water Pollution Prevention and Control Act of 1993.

I am James R. Batchelder, Vice President of Environmental Affairs and Technical Services for Koppers Industries, Inc. Koppers Industries owns and operates 13 wood preserving plants in the United States. I am a past chairman of AWPI and remain active in that organization. I am familiar with the Clean Water Act and its regulations. I am accompanied today by John C. Chambers of McKenna & Cuneo, AWPI's legal counsel and Sherri G. Zedd of Neece, Cator, Barnicle & Associates, our legislative consultant.

The Institute is the national trade association representing the wood-preserving industry. Its members include manufacturers of treated-wood products; registrants of wood-preserving pesticides regulated under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA); suppliers of raw materials and equipment; and providers of allied services (e.g., environmental engineering and consulting firms). AWPI member employ creosote, pentachlorophenol, copper-based preservatives, and inorganic arsenic-chromium formulations in the preservation of wood for consumer goods and for such industrial uses as railway ties, utility poles, and marine piling.

AWPI's comments primarily will address the wood-preserving industry's interest in maintaining the domestic-sewage exclusion (DSE) and recommended improvements to the effluent limitations and pretreatment standards process. We wish to stress four important points.

First, Congress should retain the domestic-sewage exclusion in Section 1004 of the Resource Conservation and Recovery Act (RCRA) to protect American industry's ability to continue to safely and efficiently discharge all wastewaters that have been pretreated to meet Clean Water Act and permit standards.

A critical issue for the wood-preserving industry involves the retention of the domestic-sewage exclusion under Section 1004(27) of RCRA for industrial effluents

that are discharged to publicly owned treatment works (POTWs). The industry is particularly concerned about Section 203(c) of S. 1114 which would we believe would jeopardize our use of the DSE.

Like many other industries, wood preservers produce wastewater that is: (i) listed as a hazardous waste under RCRA or (ii) contains hazardous waste. Where discharged to a POTW, this wastewater is subject to regulation under the Clean Water Act (CWA). The CWA requires pre-treatment of the wastewater and imposes rigid monitoring and discharge limitations on the wastewater generator.

AWPI opposes any ban on the discharge of wastewater to a treatment works that already is subject to permitting and pretreatment under the Clean Water Act and local authority. Unlike most other wastes, wastewater cannot be effectively land-filled or incinerated. The wastewater must eventually be released to the environment as a liquid or vapor.

Discharge to POTWs—in full compliance with the Act's pre-treatment requirements—assures that wastewaters are (i) properly and safely pre-treated by the generator, (ii) treated by the POTW, and (iii) discharged in accordance with a state or federal permit issued under the National Pollutant Discharge Elimination System (NPDES).

Additionally, under current federal rules¹, generators already are required to notify POTWs in writing that their discharge contains hazardous waste and to list the hazardous constituents in it.

We should emphasize this point: Discharge under the DSE does *not avoid* regulation; it simply *transfers* control of the discharge from RCRA to the Clean Water Act. The exclusion provides a cost-effective management alternative for industry and protects the environment.

Repeal of the domestic-sewage exclusion would eliminate an environmentally protective disposal outlet for industrial effluent meeting a Clean Water Act treatment standard.

Section 203(c) of S. 1114 would place wood-preserving wastewaters in the unusual position of being disposable at a RCRA Subtitle C facility, but being barred from discharge to a POTW *after these waters have been properly treated, using appropriate technology, to allow for safe discharge*. If implemented, this provision would create an unnecessary conflict between the two laws, produce confusion among regulated industries, and provide no additional environmental benefit.

Second, problems related to the DSE can and should be solved by proper implementation and enforcement of existing regulation of POTWs.

POTWs are already required to have pretreatment programs that regulate industrial discharges to their systems. The pretreatment requirement covers discharges that are or that contain hazardous waste. Congress should insist that EPA fully implement these requirements through enforcement and by providing help in developing standardized pretreatment standards.

NPDES permits for POTWs should properly account for connected industrial dischargers, as well as for specific local conditions. Thus, by meeting NPDES requirements and enforcing their own pretreatment requirements, POTWs will assure that industrial dischargers, including those taking advantage of the DSE, do not cause environmental harm or public hazard.

Third, pretreatment standards and effluent limitation guidelines (ELGs) do not provide the timeliness or flexibility needed. A more streamlined, efficient process should be implemented.

We believe that consideration of problems with the existing system is important because the Section 203(c) of S. 1114 makes use of the DSE dependent of the existence on—and compliance with—pretreatment standards. We have found the system of setting and updating pretreatment standards unworkable.

Pretreatment standards and effluent limitation guidelines (ELGs) must allow dischargers to apply these strictures with flexibility in relation to location specific situations and to changing regulatory and technical conditions.

The standards and guidelines for the wood preserving industry have been in effect for the wood-preserving industry since 1972 and they have not been substantially changed since then. When these standards and guidelines were promulgated, they represented the then-current state of the art in wood-preserving wastewater treatment. The wood preserving industry's effluent limitation guidelines prohibited discharge to surface waters. Similarly, the pretreatment standard for new sources (PSNS) also barred any discharge to POTWs. Nevertheless, the pretreatment stand-

¹ 40 CFR § 403.12(p)(1).

ard for existing sources (PSES) allowed discharges while limiting levels of oil and grease, copper, chromium, and arsenic.

The no-discharge requirement was accomplished by means that generally included primary oil-water separation, collection of wastewater in soil-lined surface impoundments, and treatment or disposal by evaporation in lined surface impoundments, or by treatment or disposal by evaporation or by spray application to land.

In 1980, bottom sediment sludge from the treatment of wastewaters from processes that use creosote and pentachlorophenol were listed as hazardous wastes under RCRA.

The Environmental Protection Agency (EPA) indicated that the accumulated sediment in surface impoundments was "storage" of a hazardous waste under RCRA. EPA's action made the continued use of surface impoundments impossible. Thus, many wood preservers closed their impoundments and installed treatment systems that discharged wastewater to spray irrigation fields because the effluent limitation guidelines prohibited direct discharges.

In 1991, EPA added "process wastewater" to the list of hazardous wastes from wood-preserving operations. EPA's action meant that the irrigation fields would require a RCRA permit for land disposal. RCRA permitting is not required for a discharge to a POTW or in accordance with an NPDES permit, however.

Most wood preservers who employ oilborne preservatives, including most Koppers facilities, now discharge pretreated wastewater to POTWs. But some plants, including three Koppers plants, are not served by sewer systems. Consequently, discharge to a POTW is not an option.

Because the effluent limitation guidelines require "no discharge," NPDES permits cannot be obtained for surface discharge. Thus, due to RCRA and effluent limitation guidelines, there is now no viable option for discharge of wood-preserving wastewater where a POTW is not available, no matter how well the water is treated.

The guidelines need to allow individual permit writers the flexibility to consider variances to the ELGs where changing technology and regulations make their application impractical for specific situations.

In addition, the process for reviewing and updating existing pretreatment standards and effluent limitations needs to be made workable. Due to changes in regulation and environmental standards, we in the wood-preserving industry have made substantial progress in our wastewater collection and treatment in the last 20 years. But the pretreatment standards and effluent limitations have not changed to keep pace. They are now out of date and do not provide appropriate standards for either surface discharge or pretreatment. Therefore, these standards and guidelines are generally of no use to permit writers. Many within EPA may recognize this problem, but the Agency is too busy developing new standards and guidelines to properly consider updating the existing ones.

With new industries springing up every day, it is not practical to expect EPA to write and keep current standards for every industry. In many cases, permit writers must comply with basin plans, toxics criteria, and other local concerns to the point the standards are of no use at all.

Guidelines should be promulgated only to address specific and widely applicable national needs. The guidelines should be reviewed periodically, such as every five years. Periodic reviews would allow EPA to evaluate and reaffirm the need for and the appropriateness of these standards.

Finally, the time limitation for appealing an ELG should be eliminated.

The Clean Water Act and EPA regulations provide a method for dischargers to appeal effluent limitation guidelines based on "fundamentally different factors" than were considered in developing the guidelines. Nevertheless, the statute and the regulations also require that a request for a variance based on fundamentally different factors be filed within 180 days of the date the effluent limitation was published.

No provision is made for factors that change after the effluent limitation has been promulgated. RCRA was substantially amended in 1984, land-disposal restrictions were imposed, and wood-preserving wastewater has been listed as a hazardous waste. Moreover, the state of the art of wastewater treatment technology has changed radically. Yet the effluent limitations reflect none of these changes.

EPA should be allowed to consider fundamentally different factors when issuing permits, whenever they become different, rather than being prohibited from such consideration. The time limitation for a variance based on fundamentally different factors should be rescinded.

AWPI and Koppers support responsible legislation and regulation. We encourage you, as you reauthorize the Clean Water Act, to consider our concerns. We also wel-

come any chance to work with you as the Act is considered by your Subcommittee and the full Environment and Public Works Committee. Mr. Chairman, this concludes AWPI's prepared testimony. I will be happy to answer any questions.



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October 28, 1993

SENT VIA FACSIMILE - ORIGINAL SENT VIA MAIL

Mr. Bill Leary
Senate Environment and Public Works Committee
505 Hart Senate Office Building
Washington, D.C. 20510

Dear Mr. Leary:

I considered it an honor to have the opportunity to participate in the Senate Subcommittee on Clean Water, Fisheries and Wildlife hearings and, therefore, I welcome the chance to respond further by replying to Senator Graham's specific questions contained in his letter of October 12, 1993. As I understand it, the questions actually came from Senator Kempthorne.

My answers are as follows:

Question 1.

What do you see happening if the language regarding the domestic sewage exclusion in S.1114 is enacted into law:

Answer

The proposed domestic sewage exclusion (DSE) language contains overly broad terminology that introduces potentially prohibitive interpretation to the DSE which could defeat its original and intended purpose. That purpose is to provide for regulatory transfer of wastewater from RCRA solid waste to wastewater regulated under the Clean Water Act (CWA). In the case of the wood preserving industry, all wastewaters are RCRA Listed hazardous waste unless they are "delisted" or discharged to a POTW through application of the DSE. If the DSE is eliminated or restricted as contemplated by S.1114 the wood preserving industry would be left with no viable economic discharge option, regardless of the level of pretreatment.

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Answer to Question 1 (Cont'd)

Moreover, by introducing the term "pollutant" and in a context where "the pollutant and source are subject to a pretreatment standard promulgated by the Administrator . . .", the proposed amendment creates an impossible burden on EPA and subsequent unfair and unnecessary prohibition on legitimate industrial dischargers. "Pollutant" as defined in the CWA is extremely broad. EPA could not possibly promulgate standards for all pollutants nor is it necessary from an environmental standpoint. Pretreatment standards under the CWA need only to be set for significant pollutants and discharges.

Question 2.

What types of industries depend on the domestic sewage exclusion?

Answer

The wood preserving industry has a critical dependence on the DSE to enable discharge because of the RCRA wastewater Listing, as explained previously in question No. 1. It is my understanding that other industries that depend on the DSE include chemical and specialty chemical manufacturers, textile manufacturers, metal finishers, flat glass industry, electronic interconnectors and food processors.

Question 3.

Would you comment on your industry's experience with the EPA's pretreatment standard setting process?

Answer

The existing EPA pretreatment Standards for wood preserving date back to 1972. They have not been updated and are consequently outmoded and unreflective of current technology or other regulatory changes that encroach. The standards do not allow direct or indirect discharges of process water pollutants from any new sources. A variance from categorical pretreatment standards for fundamentally different factors exists in the regulations under Subchapter N 403.13 but is unworkable to address changing factors over time due to a 180 day limitation following publication. Koppers has petitioned EPA for an exception to the 180 day limit with no success.

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Answer to Question 3 (Cont'd)

The industry approached EPA and requested re-promulgation of its' categorical standards but was denied on the basis of agency priorities and inadequate resources. The process could work if allowed, but Congress or EPA management has to-date failed to provide for satisfactory implementation and maintenance of existing laws. One hates to see unnecessary changes embodied in the amendments imposed on an already belabored system at EPA.

Question 4.

Would you provide background on how you discharge your wastes before you began using the domestic sewage exclusion?

Answer

Prior to the Listing of wood treating wastewaters under RCRA in 1990 the DSE was not an issue. The regulatory history is interesting and revealing about the system.

Prior to 1972 most oil type wood preserving wastewaters received primary treatment, consisting of separation and product recovery, and direct discharged, generally through a detention pond. The 1972 effluent limits prescribed "no direct discharge" of process wastewater pollutants into navigable waters. This dictated an industry response to comply by constructing large surface impoundments to capture and preclude discharge of process wastewaters. Aeration treatment and spray irrigation were also often employed. In 1984 RCRA banned the use of these surface impoundments and required costly closure. This constituted the first regulatory push toward the Publicly Owned Treatment Works (POTW). The final push came in 1990 when EPA listed industry wastewaters therefore eliminating spray irrigation as it would constitute land disposal. With a "no discharge" standard for direct discharges the only viable option was to pretreat and discharge to a POTW under permit as enabled by the DSE.

Regulations have reduced this industry's discharge options to one; the POTW. To compromise the DSE jeopardizes the industry's remaining discharge option.

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Question 5.

If you could not discharge your wastewater to POTWs using the DSE, what disposal options would you have? How would you rate these remaining discharge options in so far as their affect on the environment, compared to your current use of the DSE to discharge pretreated wastewater to POTWs?

Answer

Loss of POTW discharges, coupled with current categorical standards that allow no direct discharges, would leave no discharge options. Evaporation on site is an option, albeit unattractive. It is excessively costly and wasteful of energy. In the case of wood treating, evaporation could constitute RCRA hazardous waste treatment bringing with it the unacceptable regulatory T.S.D.F. baggage, air emissions, and likely Clean Air Act ramifications. It is even possible that listed wastewaters could be incinerated in an off-site RCRA T.S.D.F. facility but employing this option seems inconceivable.

Simply stated, wastewaters should be handled and regulated under Clean Water.

Question 6.

What kind of capital improvements to your facilities did you undertake in order to be able to use the DSE?

Answer

When forced to close surface impoundments the industry embarked on a program to investigate technologies, then design and install state-of-the-art, tank type pretreatment facilities. These varied depending on volume and specific requirements of the receiving POTWs. I can only speak for Koppers Industries, Inc. where the costs ranged between \$500,000 and \$3,000,000 per plant and we have 14 plants.

Question 7.

Would you describe the types of pretreatment that you perform before you discharge your wastewater to POTWs?

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Answer

All of our plants perform primary treatment which consists of oil water separation aided by chemical flocculation which provides for recovery of reusable product from the wastewater. Generally, primary separation is followed by secondary treatment consisting of biological treatment in an activated sludge, an extended aeration system, or, in one case, U.V./ozone treatment. In all cases the wastewater discharges are monitored regularly by Koppers and the POTW.

I would be happy to answer any further questions you might have. Please feel free to call on me. As you can see, retention of workable domestic sewage exclusion is paramount to Koppers and the wood preserving industry, and numerous other industries.

I thank you for your interest and consideration of our answers and concerns.

Sincerely,



R. Batchelder
Vice President and Manager
Environmental Affairs and Technical Services
KOPPERS INDUSTRIES, INC.

JRB:avd

cc: The Honorable Senator Dirk Kempthorne
SD 367 Dirksen Senate Office Building
Washington, D.C. 20510-1204

STATEMENT OF RICHARD L. HEMBRA, DIRECTOR, ENVIRONMENTAL PROTECTION ISSUES, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT DIVISION, GENERAL ACCOUNTING OFFICE

Mr. Chairman and Members of the Subcommittee:

Despite efforts under the Clean Water Act to protect our nation's waters, states continue to issue health advisory warnings banning fishing and swimming in local waters, and environmentalists argue that limits on pollutants from discharging facilities are not stringent enough to protect the public. On the other hand, industry groups and other dischargers claim that pollutant limitations in discharge permits are often overly protective, based on insufficient scientific evidence, and unnecessarily costly.

Concerned about how the Environmental Protection Agency (EPA) and states are performing the tasks essential to developing sound discharge permit limitations, the full Committee asked us in December 1992 to assess (1) EPA's efforts to develop the technical information ("criteria") that states need to develop water quality standards which, in turn, are used to set facilities' discharge limits; (2) whether pollutants that pose serious threats to health and the environment are being discharged into waters but are not included on EPA's "priority pollutant list" for criteria development; and (3) how states have implemented the Clean Water Act's requirement to adopt water quality standards for pollutants for which EPA has prepared criteria documents. Our statement today presents information collected to date on the first of these issues, along with our preliminary observations and/or plans for addressing the second and third issues.

- Faced with limited funds and competing demands, EPA has made limited progress in developing and issuing the criteria that states need to develop water quality standards for the 126 priority pollutants. To date, EPA has issued human health criteria for 72 priority pollutants and aquatic life criteria for 27 pollutants. Nearly all of these criteria were developed in the early and mid-1980s, and few have been updated, as the Clean Water Act requires. Moreover, few are complete enough to allow states to set standards that would protect their waters against all of a pollutant's harmful effects. In particular, only 9 of the priority pollutants have criteria for the full range of possible effects on human health and aquatic life.
- Notwithstanding EPA's problems in addressing the 126 pollutants on its priority list, the agency concedes that recent scientific information indicates that other pollutants may seriously affect surface waters and may also warrant attention. However, the agency currently has no plans to modify or expand the list, explaining that such an expansion would not make the best use of the agency's limited resources. During the remainder of our review, we plan to examine EPA's basis for not including other pollutants on the priority pollutant list.
- Our preliminary review of state water quality standards suggests that the number and content of water quality standards varies significantly among the states. Some states have uniformly adopted the limits suggested by EPA's criteria, and others have modified them to be either more or less stringent than these criteria. Our fieldwork at selected EPA regions and states will help us to determine the full extent, causes, and appropriateness of this variation.

BACKGROUND

To help achieve its goal of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters, the Clean Water Act requires EPA to develop and periodically review water quality criteria that states use as guidance in setting water quality standards. Water quality criteria consist of the technical information (such as the effects of various concentrations of pollutants on human health or aquatic life) that regulators need to place limitations on the amount of a pollutant that should be allowed in a waterbody, and on individual facilities' discharges into U.S. waters. Under a 1976 consent decree, EPA was required to develop criteria for aquatic life and human health for 65 pollutants and classes of pollutants designated as toxic under section 307(a) of the Clean Water Act. Because these toxic pollutants represented thousands of specific chemicals, developed a list of priority pollutants in 1977 that it would focus on for criteria development, that now consists of 126 such pollutants.¹

¹ The priority pollutant list developed in 1977 originally contained 129 pollutants; it currently contains 126 pollutants.

The 1987 amendments to the Clean Water Act mandated that in the case of each priority pollutant for which EPA criteria have been developed, each state must adopt criteria in their corresponding "water quality standards" that set allowable pollution limits on each of its waterbodies. Based on EPA guidance, individual states may modify its standards to include limitations that differ from those suggested by the EPA criteria documents, but all standards must be approved by EPA.

Water quality standards are eventually used by state permit writers to set individual dischargers' permit limits in such a way that the standards will be achieved. As we have reported in the past, in the absence of credible, scientifically based water quality standards, permit discharge limits may be over- or under protective, and become more susceptible to legal challenge.²

EPA HAS MADE LIMITED PROGRESS IN CRITERIA DEVELOPMENT

EPA has made limited progress in developing and issuing the criteria documents needed by states to develop water quality standards for the 126 priority pollutants. Our preliminary work indicates that EPA has published criteria for 86 priority pollutants. However, few of the criteria are complete enough to allow states to set standards that would protect their waters against all of a pollutant's harmful effects. For example, (1) human health criteria exist for 72 pollutants, while aquatic life criteria exist for 27 pollutants, and (2) and some of the criteria address acute effects but not long-term, chronic effects. Altogether, only nine of the priority pollutants have criteria for the full range of possible effects on human health and aquatic life.

Moreover, nearly all of these criteria were developed in the early and mid-1980s, and few have been updated to reflect new scientific information, as the Clean Water Act requires.³ In particular, all but 1 of the 72 human health criteria have been in effect since their formal publication in November 1980. EPA officials concede that new science may indeed justify changes to many of its published criteria.

EPA officials attribute the limited progress in criteria development to shortages of staffing and funds—the same the explanation we reported in our July 1991 report. During that review, EPA officials told us that, because of limited resources to develop data and perform analyses, they had to rely heavily on data published in various scientific journals.

In addition to resource limitations, we will explore at least two other reasons that may contribute to delays in EPA's future effort to develop water quality criteria:

- According to officials in EPA's Office of Science and Technology, the agency's process for developing chemical-specific criteria is time-consuming and costly. The development of proposed EPA criteria involves a detailed literature search, a peer review process and extensive laboratory testing. Proposed criteria are then drafted and go out for public comment. The process of crafting and publishing proposed criteria and deceiving and responding to public comments can take up to 9 months. From start to finish, the criteria development process can cost hundreds of thousands of dollars per pollutant and take up to 6 years.
- In addition to developing chemical-specific criteria for priority pollutants, EPA officials have cited the need to make more progress in developing other water quality criteria, such as biological criteria.⁴ We will examine the claims by these officials that chemical-specific criteria will have to compete for limited resources with these other criteria development responsibilities.

POTENTIALLY SERIOUS TOXIC POLLUTANTS NOT ON EPA'S PRIORITY LIST

EPA and other agencies have generated considerable data suggesting that pollutants other than those on EPA's 16-year-old priority pollutant list may pose a serious threat to water quality. Some of these data sources, which include information on pollutants entering surface waters, were generated under the authority of statutes other than the Clean Water Act. Foremost among these sources is EPA's Toxic Release Inventory (TRI), authorized under the Emergency Planning and Community Right-to-Know Act of 1986. TRI contains information on over 300 toxic chemicals released into the environment by industrial facilities. Pollutants potentially affecting surface waters have also been identified under programs authorized by the Safe

² *Water Pollution: Stronger Efforts Needed by EPA to Control Toxic Water Pollution* (GAO/RCED-91-154, July 19, 1991).

³ According to Section 304(a)(1) of the Clean Water Act, EPA's Administrator shall develop and publish criteria for water quality "accurately reflecting the latest scientific knowledge . . ." and shall "from time to time" revise these criteria.

⁴ Biological criteria gauge the health of the ecosystem by measuring the diversity of aquatic and plant life.

Drinking Water Act, the Federal Insecticide, Fungicide, and Rodenticide Act, and other statutes.

Officials in EPA's Office of Science and Technology acknowledge that many toxic pollutants identified through the Toxic Release Inventory, and other data bases compiled since the priority pollutant list was completed, may be causing serious surface water quality problems although they do not appear on the priority pollutant list. Nevertheless, EPA never expanded its priority pollutant list beyond the 126 previously identified, and officials have told us that they do not plan to do so in the future.

EPA officials explained, in part, that expansion of the list would not make the best use of the agency's limited resources, given its perceived need to focus more effort on developing biological, habitat, and other criteria. However, we believe this claim warrants examination because a more complete and up-to-date priority list could help ensure that EPA targets the limited resources it does devote to pollutant-specific criteria toward the most serious pollutants. EPA also argues that it has the flexibility to develop criteria for serious nonpriority pollutants and that it can ensure that a state will adopt a corresponding standard. Yet we found that regions and states typically focus on priority pollutants in adopting standards. For these reasons, during our ongoing review, we plan to examine more closely EPA's position of not including other pollutants on the priority pollutant list.

STATES' WATER QUALITY STANDARDS VARY

The Clean Water Act amendments of 1987 required states to adopt water quality standards, including numeric limitations (i.e., concentrations of chemicals present in water), in the case of priority pollutants that are expected to impair the designated uses of receiving waters, and for which EPA had published criteria.⁵ As we noted in our July 1991 report, many states were reluctant to adopt EPA's criteria as part of their water quality standards. EPA and state officials noted that (1) some states questioned the validity of scientific data, the methodology underlying some toxic criteria, and/or laboratory analyses EPA used to develop its criteria documents; (2) some believed that permit limits based on EPA's criteria were overly protective and too costly; and (3) some said that incorporating numeric toxic criteria into their water quality standards involved burdensome state rulemaking procedures. Ultimately, however, the required standards were adopted in all states.⁶

We are presently gathering information from each of EPA's regional offices on the content of states' standards. Our preliminary review of the information gathered to date reveals a good deal of variation in both the stringency and completeness of states' standards. For example:

- In adopting human health criteria for carcinogenic pollutants, some states use a risk factor of 1 in 1 million, whereas others use a less stringent standard of 1 in 100,000. Among the more controversial issues in states' adoption of standards is the case of dioxin: some states adopted EPA's recommended dioxin criteria, while others adopted a less stringent standard.
- Some states adopted standards for all priority and nonpriority pollutants for which EPA had developed criteria (whether or not they were being discharged), while others adopted standards only for priority pollutants, and only if they believed the pollutants were being discharged.

Our preliminary work suggests that many of the variations between the limitations in state standards and EPA's published criteria are consistent with the flexibility provided by EPA guidance. In particular, such diversity is often driven by site-specific variations from one geographic area to another. State, EPA, environmental, and industry officials, however, suggest that there may be cases for which such variations are not warranted and place certain dischargers at a competitive advantage or disadvantage.

During the remainder of our review, we will contact all regions and visit several states to ascertain the extent of variation among states' standards adoption practices and the reasons for such variations. We will also examine the consistency with which different EPA regions evaluate and approve state standards and the extent to

⁵ Section 303(c)(2)(B) of the Clean Water Act requires states to adopt numeric criteria unless such criteria are not available. If numeric criteria are not available, states shall adopt criteria based on biological monitoring or other specified assessment methods.

⁶ Fourteen states did not adopt all required standards. As a result, EPA issued a rule, effective February 5, 1993, promulgating standards for these states. 57 *Fed. Reg.* 60848 (Dec. 22, 1992).

which EPA headquarters encourages consistency of such oversight from one region to another.

SUMMARY

The nation's current system of controlling toxic discharges from industrial, municipal, and other sources relies on the use of defensible and scientifically based permit limits. Permit limits are based, in part, on states' water quality standards which, in turn, depend largely on EPA water quality criteria. Without sound criteria and standards, discharge permits may be either over- or under-protective of the environment, and may be more open to legal challenges.

EPA has made limited progress in developing and issuing the criteria needed by states to develop water quality standards for the 126 priority pollutants. Specifically, (1) criteria for some pollutants have not been developed, (2) most of the criteria that have been developed date back to the early to mid-1980s, and (3) few criteria documents are complete enough to allow states to set standards that would fully address a priority pollutant's harmful effects.

Our preliminary findings also suggest that a number of pollutants that seriously affect water quality are not on EPA's list and that the agency currently has no plans to modify or expand the list to include them. EPA has offered several explanations for this approach, which we plan to examine during the remainder of our review.

Similarly, our preliminary review of state water quality standards suggests that the number and content of water quality standards varies significantly among the states, although we have not yet determined the extent to which such diversity is justified. Our fieldwork at selected EPA regions and states will help us to determine the full extent and causes of these variations.

Mr. Chairman, this concludes our statement for the record. We appreciate the opportunity to present our preliminary findings on these issues.

REAUTHORIZATION OF THE CLEAN WATER ACT

WEDNESDAY, JULY 14, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

NON-POINT SOURCE POLLUTION CONTROL

The subcommittee met, pursuant to recess, at 9:37 a.m. in room 406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Chafee, Lieberman, Durenberger, Faircloth, Kempthorne, and Baucus.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. This meeting will come to order.

This is the fourth in a series of hearings of the subcommittee on reauthorization of the Clean Water Act. Today our focus will be on non-point source pollution.

Despite the fact that much was known about non-point source pollution in 1972, the Clean Water Act, as originally enacted, primarily focused on point-source, industrial and municipal sources that discharged waste water from discrete pipes and ditches. The Act has been successful in bringing point sources into compliance. In fact, the Environmental Protection Agency believes that 87 percent of industrial, and 85 percent of municipal sources are in substantial compliance with permit requirements as a result of the Clean Water Act requirements.

However, as these sources achieve compliance, run-off from diffuse urban and rural sources, termed non-point source pollution, represents the largest portion of the Nation's remaining surface water problem. EPA estimates that non-point pollution represents over one-half of our remaining water quality problem.

I am very familiar with the impact of non-point source pollution on our Nation's water. Just yesterday, I participated in an important event in the restoration of the Florida Everglades, which has suffered in large part from non-point source pollution arising from a variety of sources, including the Everglades agricultural area. I have seen the harm that comes to an ecosystem from pollution run-off, and the difficulties in attempting to deal with it.

On June the 16th, this subcommittee heard from a panel of scientists who told us that non-point source pollution and aquatic habit degradation from non-point sources are two of the most im-

portant remaining problems facing America's waters. Non-point source pollution prevents full use of more than 75 percent of the rivers' miles assessed by States. About 20 percent of the Nation's lake acreage is affected by non-point source pollution.

In 1987 Congress created section 319 of the Act, the first comprehensive non-point pollution program. Nonetheless, little has been done to control this major source of pollution. Several concerns have been raised about implementation of section 319. Mostly, it has been criticized for inadequate funding and for a lack of vision. One of our witnesses today said that we have been running the program for six years like a demonstration project, rather than a serious, long-term commitment.

But the quality of assessments by the States of their non-point pollution problems has also been suspect. So, too, is the fact that there is no real consequence if a State fails to properly address its non-point problems.

Today one of the issues we should address is the adequacy of funding of the section 319 program. The Baucus-Chafee Bill substantially increases funding. The bill also requires States to reassess their waters and to identify impaired waters and provide financial consequences if they fail to do so.

We will also address how best to help agricultural and other interests reduce their pollution and the appropriate role of EPA, other Federal agencies, and the States in providing that assistance.

While next week's hearing will focus on watershed planning, it is impossible to discuss non-point pollution without reference to watershed planning. This is true both because most people believe it to be the best mechanism to address the problem, and because it is the approach which is taken in the bill before us.

For this reason, we will start today with the New York State Commissioner of Agriculture, Mr. Richard McGuire, and the New York City Environmental Commissioner, Mr. Albert Appleton, who can tell us briefly about the innovative approach they took to address non-point source pollution that was threatening the drinking water supply of New York City.

We will also explore the concerns of a variety of witnesses today as to how we can best improve the Clean Water Act so that we can achieve the same level of success with this form of pollution as we have achieved with others.

I am pleased to see that in our second panel today we have number of witnesses who actually earn their living on the farm, and thus can provide us a perspective that is not often heard in these discussions.

As can be seen, we will begin using the informal format that we tried at our last hearing. Because we wish to use this format to facilitate discussion, I'll ask our witnesses to make a brief opening statement, and then we will proceed to questions from members of the committee, as well as a discussion among the panelists. The full written statements, and any additional materials, will be made a part of the record.

I am pleased that we are joined today by the ranking member of the committee, and of this subcommittee, and one of the co-authors of the bill that we are using as the basis of our hearing, Senator John Chafee.

Senator Chafee?

OPENING STATEMENT OF HON. JOHN H. CHAFEE, U.S. SENATOR
FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. Thank you very much, Mr. Chairman.

I want to subscribe to what you said in your opening statement. I also want to join in welcoming the witnesses here today. I think this is one of the more important hearings we have in connection with the reauthorization of the Clean Water Act.

It seems to me quite clear, as you pointed out, Mr. Chairman, that our best opportunity to improve water quality is to address these non-point sources of pollution; run-off from farms, and city streets, and forests and construction sites. As you pointed out, so much has been accomplished under the point source provisions of the Clean Water Act, that now non-point pollution is our number one water quality problem.

I might say this, Mr. Chairman: If the only thing we accomplish in the 1993 reauthorization of the Clean Water Act is to establish an effective, workable program to address non-point source pollution, I think this bill could be considered a big success. I think we should keep clearly in our minds that non-point source pollution is our highest priority.

As you mentioned, the bill that Senator Baucus and I introduced, S. 1114, has one element that I would like to stress. That is this: Based on our past experience, I'm convinced that regulations from EPA cannot be effective in solving these non-point source pollution problems. EPA can grind out all the regulations and we can have them working nights over there, but it won't do the trick.

What we really have to do is to have the landowners, farmers, or the forest owners, or the construction site owners, or the mayors of the cities, participate directly in the plans that are made to protect our lakes, and rivers, and streams, and bays in their own communities. We have to get this attachment of the belonging aspect, that these waters are their waters, the farmers' waters, and the mayors' waters.

This bill that we have before us does include incentives for, as you say, comprehensive watershed planning, for site-specific non-point control plans that give people at the local level a chance to shape the program. We are taking this approach because we believe that farmers and developers and small towns will happily agree to do more as authors of a local plan for their waters than EPA could ever do by issuing regulations from here in Washington.

So I look forward to this hearing. As you say, you have some really hands-on people, farmers who are farmers, and others here. I look forward to hearing their testimony.

Thank you.

Senator GRAHAM. Thank you very much, Senator Chafee.

I'd like to ask the members of the first panel if they would please come forward. I will briefly introduce them as they do so.

Mr. Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, U.S. Environmental Protection Agency. Thank you.

Ms. Diane Cameron, of the Natural Resources Defense Council.

Mr. Gerald Vap, Vice-President of the National Association of Conservation Districts.

Mr. George Olszewski, of the Georgia Pacific Company. Mr. Olszewski is representing the American Forest Paper Institute.

Mr. Richard T. McGuire, New York Commissioner of Agriculture and Markets, and Mr. Albert Appleton, New York City Environmental Commissioner. Both of these are representing the National Association of State Departments of Agriculture.

I would like to ask each of the members of the panel to make a short statement. I would request you limit it to five minutes. We have a timing device. Your full statements and any other materials that you would like to provide will be incorporated as part of the record. After your statements we will move to questions and discussion.

It is my understanding that we are going to have a vote at approximately 10:30 a.m. I would hope that we might be able to complete our discussion prior to when Senator Chafee and I will have to leave for a vote, so that there will not be an interruption in the discussion of the first panel.

As I indicated in my opening statement, I would like to call on Mr. McGuire and Mr. Appleton. If they would kick this off with their statement as to what is being done in New York State in order to protect the water supply of New York City, then we will call on the other members of the panel in the order in which they were introduced.

Mr. McGuire?

STATEMENT OF RICHARD T. MCGUIRE, NEW YORK STATE COMMISSIONER OF AGRICULTURE AND MARKETS

Mr MCGUIRE. Senator Graham and Senator Chafee, I am pleased to be here this morning with my colleague, Albert Appleton from New York City. I think we have a real story to tell you. I will proceed as rapidly as possible.

My principal purpose is to describe to you the unique approach that has been adopted between the farm community and New York City in addressing its drinking water protection needs in its watershed, and its importance to the development of National non-point source pollution control policy. My remarks before you will be confined to the watershed program. I believe there are some important principles embodied in the New York City watershed agricultural arrangement that the committee may want to consider in reauthorizing the Clean Water Act.

The New York City watershed is rather unique. The successful effort that we have embarked on is based upon the prospective voluntary adaption of best management practices to control non-point source pollution by the more than 550 dairy farms and other farms in the New York City watershed area.

Farming has been practiced in the New York City watershed area of Delaware, Schoharie, Sullivan and Green Counties since long before New York City came to rely on the watershed for most of its water supply. The City has preserved its water quality in the midst of agricultural production for decades. So we approach from a point of strength, rather than a point of a problem. Our total

effort is focused on preserving that good quality, not having to correct a bad situation.

Efforts to improve farming practices, especially through the adoption of soil and water conservation techniques with the leadership of USDA Soil Conservation Service, delivered to the local soil and water conservation districts and ASCS offices have allowed farmers to maintain the economic viability of their farms by keeping their top soil on the land. This voluntary, locally based effort by farmers has a proved record of success, not just in New York State, but in most parts of the United States.

Let me say that because of the topography of New York—very hilly land, a lot of water systems, a lot of lakes and streams—soil conservation practices were initiated and were practiced probably ahead of most of other areas of the Country, some 50 years ago, with the focus being on keeping the soil on the farm, rather than the focus being on improving the water system.

So it is very applicable why this has happened already. Agriculture in the watershed has been changing. The pressures of the economics of dairy farming have led to larger herds of dairy cows, intensification of land use for crop production, and greater concentrations of animal waste. New measures based upon the proven path of voluntary and locally based approaches need to be implemented to cope with the increased requirements for drinking water protection and raw water quality maintenance for the New York City watershed area.

The Whole Farm Planning Approach Program is being implemented to meet the needs of farms in the watershed as well as the metropolitan area of the urban public, which is dependent upon this surface water supply. This approach is a result of a lot of hard work by all who were concerned about long-term protection of the City's water quality, while maintaining the agricultural economy as well.

In mid-1990, New York City circulated a draft of mandatory restrictive agricultural land use regulations that they thought were necessary to meet their goal of drinking water source protection without resorting to a full filtration system. Uniform and inflexible regulations were seen as unworkable and undesirable by the local agriculture community due to their negative impact upon the farm economy of the region.

In December of 1990, the New York City Department of Environmental Protection and the New York State Department of Agriculture and Markets cooperated in convening an ad hoc task force on agriculture and New York City watershed regulations. This group was composed of local farmers, local agricultural and environmental and government organizations of leaders, State representatives, and technical advisers. The Task Force was comprised of a policy group and a technical support group. Over a period of time they worked out a compromise position that was advantageous to everyone.

Farming in the New York City water supply watershed presents a complicated environmental management problem. Farming methods and practices are a potential source of non-point pollution. A locally developed and administered program of best management practices on a farm-by-farm basis was tailored, and is now being

implemented. The City, after consulting with appropriate bodies and after full review of Federal and State regulations, was satisfied that such a program would meet the avoidance criteria for effective watershed regulation. It represents the best strategy for dealing with concerns of both the city and farm community.

The whole farm planning and best management practices is now being put in place on farms in that area. Over a period of time we are sure they will be successful.

So I think my time is used up, Senator. May I continue a little bit?

Senator GRAHAM. You might take another minute or so to summarize.

Mr McGUIRE. I appreciate it.

The Whole Farm Approach to drinking water quality source protection integrates selected management practices intended to provide short and long term protection of water quality, with a farm business plan designed to sustain a profitable agricultural enterprise, given the mix of physical, capital, and management resources available to, and consistent with, the objectives of the farm operation.

I want to stress that we need this on a farm-by-farm basis. The thing we must avoid is mandatory regulations that are mandated on every farm, because no two farms are alike. Their soils are not alike; their geography is not alike; their type of agriculture that they may be conducting are not alike. So it is necessary, if we are going to have the result we desire, and also maintain a viable agriculture, which I am convinced is possible, we have to approach this on a one-on-one, individual farm basis.

This may be timely, but I am confident that the results will be satisfactory to everyone concerned.

I will be happy to answer any further questions.

Senator GRAHAM. Thank you very much, Mr. McGuire.

I would like to ask some questions, but I will hold those until after we have heard from all of the members of the panel with their opening statements.

Mr. Appleton?

STATEMENT OF ALBERT F. APPLETON, COMMISSIONER, NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. APPLETON. Senator Graham, Senator Chafee, I am pleased to be here today to talk about watershed protection and non-point source pollution.

The Dinkins administration in its environmental programs, both in the watershed, but also in the estuary, has made these programs a center-piece of our environmental strategy. I think it is very important to note some lessons from that experience.

One is pollution prevention is essential to effective non-point source pollution control. The difficulties in implementing best management practices and others give an enormous premium to keeping pollution out of the waste stream to begin with.

Technically, I personally feel the failure of non-point source pollution programs in the past has been a failure to address the messy politics of land use, and environmentally appropriate land use in

all its dimensions. A non-point source pollution strategy that fails to do that is doomed to failure.

This is why new institutional arrangements, particularly the watershed protection approach that S. 1114 is talking about, are enormously important to us. It is the kind of thing we have been trying to do in our programs.

As Commissioner McGuire laid out, we had a very difficult problem to face in the New York City watershed. There are some lessons to be learned from it. One thing that made our approach work is that we came up determined to meet an environmental goal, not to run a regulatory system.

In a sense, a regulatory system set a benchmark for us, but when the farm community came to us and said, "We can give you your water quality, but let us do this our way," we spent enough time testing their bona fides. Once it was clear that they would be seriously committed to our goal of water quality, then we were in a position to seriously commit to and to try out, their option of a non-regulatory, farm-by-farm, individual approach.

Another lesson is that local leadership is essential. I cannot speak highly enough of the assistance we got from the State Department of Agriculture, not only Commissioner McGuire, but Deputy Commissioner Dennis Rapp, who served as facilitator, and members of the local farm community, some of whom are identified in my written remarks.

A third thing is it is very important that we all learn a new language if we are going to make these deals work. Environmentalists, environmental regulators, environmental institutions have their own language. It is an insider's language. Environmental conflict has created a language. Voluntary, for example, is an enormous buzzword.

Senator CHAFEE. What was that word again?

Mr. APPLETON. Voluntary. The issue of whether this would be a voluntary program, Senator, was an enormously explosive issue politically. Farmers were determined to have a program that was voluntary for each farm. We, on the other hand, had seen many non-point source programs in the past fail, because the conscientious people are already doing it, or would participate in it and everyone else wouldn't.

The ultimate way we got around this problem was to take a new approach. That is, we established that the program would be voluntary as to any individual farm, but that the leadership of the agricultural community committed to work with us. It is their commitment to provide 85 percent participation within five years of this program or the City would be free to go back to a more traditional regulatory approach.

The City in turn agreed to fund the cost of this program as an alternative to the cost of running a regulatory system. So while we were able to satisfy the desire of the individual farmers for a voluntary program, we were able to meet our own need for a reliable critical mass of pollution reduction, which we estimate will be by at least two-thirds by the end of the decade.

We all took some political risks doing that. I must tell you, the first article in the New York Times quoted several of my environmental friends who had not read the fine print denouncing the pro-

gram because it was, quote, voluntary, not realizing how it had been structured. That there are political risks in these kinds of programs, regulatory systems, is certain. We have people in the watershed who want us to do all of the collaborative programs, but at the same time want us to have very specific, numerical standards for every single thing we do.

Now, the success of Whole Farm Planning has led us to a larger series of conversations throughout the watersheds—our watersheds are 2,000 square miles, the size of the State of Delaware nearly—with local towns, communities, forestry, and other business associations over what is now called the Whole Community Planning approach, in which we are offering to waive all or part of our regulation in exchange for community-based plans that will give us at least the same water quality protection and improvement that we would get from a regulatory baseline.

We are proceeding with the regulatory baseline. Our final new regulations will be out in November of this year. At the same time, the Mayor set \$120 million aside in a watershed protection and partnership program to fund these collaborative pollution clean-up programs on a town-by-town basis. We have six model towns we are working with.

Could I have one more minute to sum up?

Senator GRAHAM. Please do.

Mr. APPLETON. I think it is very important that we see these programs from an overall context. At the same time the City has been doing this collaboration, it has issued more clean water suits than any other jurisdiction in the country against polluters, and set aside over \$200 million for acquisition of core land areas around reservoirs, stream border protection, and other institutions.

A watershed program to be successful must be truly comprehensive to deal with non-point sources. It must be truly comprehensive.

My great worry is that watershed protection, the watershed protection approach will become just another bureaucratic layer, that we will look for a one-size-fits-all approach, but we will not promote the kind of local entrepreneurial environmental leadership that the farm community came forward with. I hope when we draft S. 1114, we have the courage to walk away from some of our own bureaucratic assurances to take the more risky, entrepreneurial, but I believe the only course that will be successful.

Senator GRAHAM. Thank you very much, Mr. Appleton.

I appreciate you and Mr. McGuire's background on what has been a very much watched National effort at non-point pollution control. I look forward to asking some questions in a moment.

Mr. Grubbs?

STATEMENT OF GEOFFREY H. GRUBBS, DIRECTOR, ASSESSMENT AND WATERSHED PROTECTION DIVISION, ENVIRONMENTAL PROTECTION AGENCY

Mr. GRUBBS. Thank you for this opportunity.

I am here today in two capacities: One is EPA's National Program Manager for the non-point source program, and in that regard I am looking forward to the discussion period so that we can

talk about how to make these programs really work. The other is to speak for the administration more broadly on non-point sources, in particular S. 1114 and many of the concepts you have advanced here.

Without reciting my testimony, I would just point that in the testimony there are 15 or 16 specific places where we support S. 1114. We think it is generally the right direction with regard to non-point sources and agree wholeheartedly with your initial statements here, that if we accomplish something really meaningful in the Clean Water Act reauthorization process it will be real change for non-point sources.

I also say in that regard we talked at some length with the Administrator, who is in Chicago today, and with persons at senior political levels at OMB and elsewhere, as well as a number of other Federal agencies to arrive at these positions.

I won't repeat your very thorough summary at the beginning, Senator, on the extent of the non-point source pollution problem, except to say we agree with it. We think this water quantity problem needs to be recognized and we think that your assessment of the importance of it is correct.

Moving beyond that, though, we do think in the administration that State-led programs are the best approach here. We also agree that section 319 is the best approach to take. It provides a good framework for us. We shouldn't be throwing it out and starting all over again with a new set of Federal and very different kinds of requirements. We want to rely upon States and local organizations and private landowners as this moves forward.

But, having administered this program for the last five years, my personal observation is that the differences we see among State programs are far more than can really be justified by the differences in local conditions. We are having some problems in some States getting programs up to a basic level of performance. I think that in moving towards new Clean Water Act, we need to take a hard look at what our bottom lines really are in section 319, and make sure we are getting the kind of performance from these State and local programs nationally that we need in order to solve the problems that you talked about.

Specifically, we very much support the notion in S. 1114 that we need to update State non-point source assessments. We, by that, I mean States, need to go through and update their non-point source assessments. EPA should retain the authority we now have under section 319 to act where States fail. But this is a central part of using our resources wisely and targeting programs to the places that have the greatest problems.

We do think that we need clear technical baselines for controls and practices that are needed. We support S. 1114's approach for EPA to establish guidance, not regulations, but guidance, for non-point source management measures. This guidance would lay out broad expectations for performance for these non-point source management systems that are general enough that they make sense when from Alaska to Puerto Rico, and are flexible enough that they can be tailored and adapted to site-specific conditions. We think that is an important baseline to establish.

We agree that these baseline management resource need to be develop together with other Federal agencies, as we did once in the past with the Coastal Zone Guidance, which has been discussed here previously. We support the approach in S. 1114 of putting the greatest weight of these best available management measures upon existing non-point sources in impaired areas where you have anticipate water quantity problem. This strategy is something we would specifically support, as well as extending that some level of non-point source control to significant new land disturbances in areas that are currently clean. This is a very sensible and practical approach.

We also support the use of site-specific plans adopted locally, and taking local circumstances into account. But we would like to make sure that as site-specific plans go forward there is some level of pollution reduction that is achieved by these site-specific plans that is commensurate with what the state of the art can yield.

We very much support the idea in S. 1114 of a 12 1/2-year time frame. This isn't going to be done overnight. You proposed in your bill two five-year cycles that would lead to full implementation of these management measures, but we would like to see this directed in the end toward water quality objectives, and think that we need to specifically recognize State water quality standards and designated uses as our main water quality objectives as the endpoint of our second cycle.

I won't talk at length today about watershed management and protection plans, since that is the subject of next week's hearing, but I will say that we generally do support the idea of deferring to show watershed programs crafted by States and responsible organizations. These water shed programs may be scientific but must be capable of meeting those environmental endpoints so that we can get to where we need to be in some reasonable time frame.

I'd like to make two more points, if I can.

The first is with regard to implementation, we do support a voluntary and consensus-based approach as a strategy of first choice. This is not going to be done overnight, and it is not going to be done through compulsion by EPA, that is for sure.

At the same time, as these programs are moved forward, and Soil Conservation Service and the many able State assistance agencies move forward with their programs, we do think it is important, up front, that States establish enforceable mechanisms in these improved non-point source programs that can brought into play after a reasonable time if voluntary means fail. They would be triggered as a last resort after the voluntary means fail. We think this is important.

We also support the notion that EPA should be empowered to act in the cases where those hopefully very few State and territories decline to take on the non-point source problems they have in front of them.

I'd just like to just say in closing that we do think we will be able to reap substantial benefits out of the approach that both of you have proposed and we are supporting here. With the delivery power of other Federal agencies, of States, of local and county organizations, and the individuals who decide to do non-point source controls because that is the right thing to do, not because someone

compelled them to do it, we think we will get to where we need to be in a reasonable time and in fashion, that we at EPA can administer.

Thank you.

Senator GRAHAM. Thank you, Mr. Grubbs.

Since we have started, we have been joined by Senators Durenberger and Lieberman. If either of you have an opening statement that you would like to make at this time, we would be pleased to hear you.

**OPENING STATEMENT OF HON. DAVE DURENBERGER, U.S.
SENATOR FROM THE STATE OF MINNESOTA**

Senator DURENBERGER. Mr. Chairman, I thank you very much.

Let me just say that as I walked in the door, and saw your hearing format, Jimmy Powell, my staffer, said, doesn't this remind you of the old days when there was an Intergovernmental Relations Subcommittee, and we would invite witnesses to come and sit up on the dais to help us examine other witnesses? We actually made progress inside that little room.

Since then they have dissolved the Intergovernmental Relations Subcommittee. Nobody but you, and some of the folks at this table seem to think in those terms anymore.

I just wanted you to know that two of us recalled that there was a day here 10 years ago when people thought in the kinds of terms that you do now. I want to urge you to continue to think in those terms.

It isn't just the style of approach, but it is your commitment. I know Joe Lieberman and John Chafee feel the same way about this. We can find a better way to get this done. Using the intergovernmental system more appropriately is a key to doing it.

Jim Oberstar is doing it on that side, and it reflects Minnesota's deep and traditional concern for the problems of non-point source pollution.

But, in Minnesota, like in the rest of the country, the problem is getting greater. Section 319, for a variety of reasons—we still think it is a great piece of work—but for a variety of reasons that we have pointed out here, we can't demonstrate great results.

I'm just here, number one, to compliment you and our ranking member for your commitment to take on the very, very difficult task. I pledge to you, as an original author of this, and person who comes from a place that thinks in these terms, I will do everything I can to help make this process a success. I certainly welcome all of the many people in this room who have been at this since 1987, some maybe longer than that, but at least since I got deeply involved in it in 1987. I see people in this room who have been at it that long. I appreciate your reaching out today.

Senator GRAHAM. Thank you very much, Senator. I appreciate those kind remarks.

Senator Lieberman?

OPENING STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S.
SENATOR FROM THE STATE OF CONNECTICUT

Senator LIEBERMAN. Mr. Chairman, I associate myself with what David has just said. I come to the Senate from having been a State Attorney General, and in that sense, a State enforcer of some of the laws that were passed here.

With that perspective, and which I appreciate seeing represented on the other side of the table, I agree that we are all in this together. It is this kind of intergovernmental dialog that will produce real and practical solutions, or at least amelioratives.

I would also like to compliment you again on this process, and to say that in Connecticut, as everywhere else around the country, we are coming to appreciate what a growing role non-point source pollution plays in water pollution problems, and how it is the next great objective that we all have if we want to truly make our Nation's waters clean, fishable, swimmable.

I look forward to the conversation.

Senator GRAHAM. Thank you very much, Senators.

Ms. Diane Cameron?

STATEMENT OF DIANE CAMERON, NATURAL RESOURCES
DEFENSE COUNCIL

Ms. CAMERON. Thank you, Senator.

I am giving my testimony on behalf of the Natural Resources Defense Council. We are working on many of the aspects of the Clean Water Act reauthorization through the 420-member Clean Water Network.

Senator, you gave some statistics already on the magnitude of the problem of polluted run-off, non-point source pollution. I would like to give a few more statistics that I think are particularly vivid, that help us to paint the picture about the magnitude of the problem, particularly in agriculture.

We are learning more and more around the country as scientists continue to study water pollution problems from agriculture. As one example relating to endangered species, about 37 percent of the 436 species listed in the Endangered Species Information System Data Base, which I believe is from the Department of the Interior, are imperiled at least in part by irrigation and the use of pesticides.

Fish kills are a significant impact that is attributed to agricultural run-off. In EPA's 1986 and 1987 summary of State reports on fish kills, animal feedlot and waste operations were blamed for one million fish killed. Most of that was estimated to have been caused by oxygen starvation from manure pollution.

To give another vivid example of that kind of a fish kill, I have an article from the May 29, 1993 Des Moines Register. Of course Des Moines is now dealing with another kind of run-off problem, which is of grave seriousness. There was a run-off problem in May. Liquid cattle manure flowed off of one farm and is believed to have been responsible for killing more than 178,000 fish in a very popular trout stream that is stocked regularly by the State.

That is one vivid example of what can happen if we don't have adequate controls.

Of course, soil erosion is huge, even though we do have a very strong program, at least in its construction. We have a strong conservation compliance program under the Farm Bill, without getting into details on its implementation. Nonetheless, we still have 1.6 billion tons estimated to have been eroded in 1987 from crop land. We still have a massive soil erosion problem that is serious.

A couple more brief statistics: The United States Geological Survey has found significant surface water pollution throughout the mid-western States of the Mississippi basin system attributed to herbicide run-off from current-use herbicides. For example, 52 percent of the sites examined by the USGS exceeded the primary drinking water standard for atrazine. 32 percent of the sites exceeded the primary drinking water standard for alachlor, and 7 percent for the herbicide, simazine.

This is a very significant study. It looked at 149 sites, and 122 river basins in 10 mid-western States. One of the reasons this is so significant is that these herbicides do not tend to be removed significantly by typical drinking water treatment plants. Thus, if they get into drinking water and the communities are not wealthy and do not have advanced drinking water treatment, and they are exceeding drinking water standards, it is a potential health concern.

I think I have given a few statistics that illustrate that this is a very serious problem. Earlier speakers have highlighted the fact that we need to move into a new era of run-off control, and run-off management.

In a nutshell, our view on Title III of S. 1114 is that it does move us into this new era of run-off management. We support many of the basic concepts in the run-off control portions of S. 1114. Notably there are six key elements in Title III that we particularly like.

They are: Whole watershed planning as the preferred approach for restoring water quality; number two, required management measures for new sources—we feel this is critical; number three, further coordination between water quality related Farm Bill programs and Clean Water Act programs; number four, encouragement of volunteer citizen water quality monitoring—although we feel that volunteer monitoring is so critical that States should be required to review and use such data; number five, significantly increased funding levels for non-point source programs; and number six, provisions for run-off controls for activities on Federal lands.

For example, there is widespread acknowledgement that overgrazing is a significant problem on our Federal lands, and there are some simple solutions to the water quality problems that it causes. We feel that the Federal lands provision in S. 1114 will help to move us forward in controlling that kind of a problem.

Just to wrap up, we support these basic elements of the run-off control policy in S. 1114. There are some strengthening changes that we would like to see made to it, but overall we think that it is on the right track.

Senator GRAHAM. Thank you very much.

Mr. Gerald Vap?

STATEMENT OF GERALD VAP, VICE PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS, McCOOK, NEBRASKA

Mr. VAP. Mr. Chairman, members of the committee, my name is Gerald Vap. I am from a small community of 8,000 people called McCook, Nebraska in the Southwest corner of the State.

I represent the National Association of Conservation Districts as their vice president. We speak for the 3,000 soil and water conservation districts around the Nation. Possibly more significant than that is that I am the chairman of our local conservation district. We in the past three years have instituted in Nebraska what is known as a special protection area for non-point source pollution.

Through several years of testing, data gathering, we determined that our groundwater was becoming degraded by nitrate and nitrogen. We brought to bear the programs of the EPA 319 program, ASCS's WQIP program. We use the Soil Conservation Service, use the Extension Service, our State and local agencies, all to institute this program.

We have an area that we have designated as endangered, 450 square miles within our district. We are in the process of stopping any further pollution from nitrate and nitrogen. We are doing it with incentive driven, voluntary programs, education, things that the 319 program does best. We are doing it with locally conceived programs, and with great cooperation of the farmers and the communities in that area.

We would, as a national association, agree with Mr. McGuire, and we are pleased to hear him give credit to the Soil Conservation Service and our local conservation districts for helping them perform a great service to the people of New York in developing their programs. I think they are to be commended. It is a good example of how site-specific planning, which we support, and State controls of the program, State development along with the local conservation district and local people cooperating as to what NACD stands for in this particular program.

We do like several things in the new reauthorization law. We go for the site-specific planning, the State roles in continuing to expand on their non-point source problems, identify those problems, and develop programs that will take care of those on a site-specific basis rather than trying to come up with a one T-shirt fits everybody type of thing. It doesn't work in any particular situation. Soil types, watersheds, they all are different. They all need to be looked differently and planned for differently.

Having gone through applying for 319 funds for our local district, we find that it is an excellent program. It perhaps needs some streamlining. It takes longer to get those funds than we had anticipated, but they are coming forth. They are doing a good job now, but perhaps there is some streamlining that could be done there.

We would agree that as a national association that funding is extremely important. If the Congress of the United States is to pass this legislation, asking the States of this Country to come up with a better method of handling non-point source pollution, they also need to come up with the financial and technical resources to do

that job. Financial support for the States and local entities, but also the technical support needed.

We feel that is best supplied by the Soil Conservation Service of the USDA. They are experts in that field. They probably will do the best job, we think, but we need to be serious about funding and technical support to make this work.

We have a few concerns about the time-frame. We think the 180 days is a little too short for the EPA to come up with their portion of it, and six months for the States to respond is a little bit short. We would like to see you expand that.

In general, we agree with the bill. There are just a few things that we would like to see change. I would be happy to expand on our local program, or anything NACD stands for.

Thank you.

Senator GRAHAM. Thank you very much, Mr. Vap.

Mr. Olszewski?

STATEMENT OF ROBERT OLSZEWSKI, REPRESENTING AMERICAN FOREST AND PAPER ASSOCIATION

Mr. OLSZEWSKI. Thank you, Senator Graham and members of the subcommittee.

My name is Rob Olszewski. I am manager of forest hydrology for Georgia Pacific. I have been in that position since March, but I come to you more as a Floridian. The last six years I have been down there working with the State Forestry Association, and the six years before that I, in fact, was the key employee with the State Division of Forestry, involved directly with the implementation of BMPs on forest lands across that part of the world.

I am speaking today on the part of AFPA, the American Forest and Paper Association, which is the national trade association for the forest products industry. I am also a small landowner. I own three small tracts of land in the Tallahassee and South Georgia area, and I have some streams on it. So I guess I can speak from that prospective to some extent also.

Senator GRAHAM. I thought you were a person who looked unusually, healthy, happy, and prosperous.

[Laughter.]

Mr. OLSZEWSKI. I knew we could talk today, Senator.

[Laughter.]

Mr. OLSZEWSKI. Although this hearing is confined to issues affecting non-point source run-off, we would request, with your permission, Mr. Chairman, to submit a longer statement for the hearing record which details some serious concerns our industry has with a number of, especially, point source issues contained in the bill. We will do that at a later appropriate date.

The forest industry, which includes about seven million small, private woodlot owners like myself, has been implementing non-point source BMPs, what is in effect called management measures in S. 1114, for a number of years since passage of the 1972 Clean Water Act. All States with significant forest management activities have either passed forest practice laws or developed BMPs approved by EPA, we might add, to minimize the impact of timber harvesting on water quality.

Consequently, forestry activities contribute relatively little to water quality impairment as opposed to other land use activities. According to even EPA, forestry contributes on average only six percent of the loadings attributed to non-point source pollution.

Beyond the quantity issues there is also the question of quality. Run-off from forests has been demonstrated to be much cleaner than that from other types of land uses, as well.

With regard to forestry, we ask you to move forward with extreme caution on any non-point source pollution legislation, to consider the approaches that we think are working well today.

First we'd urge you recognize highly successful efforts already being made now implementing management measures, particularly in silvicultural management. State reporting requirements under Section 305B, State BMP, and auditing programs, EPA section 319 reports, and various studies by the industry's national council of paper industry for air and stream improvement confirm that forest management activities represent, really, a de minimis contribution of non-point source water quality impairment.

Many audits have been conducted by individual States to indicate the effectiveness of State forestry non-point source programs. The audit conducted by the Division of Forestry in Florida indicates approximately 94 percent compliance today with BMPs. In Virginia, the figure is roughly 90 percent, in South Carolina, 85 percent. These numbers have been achieved through existing programs and the existing outreach efforts on the part of the industry and the States. We want to do anything we can to expand and intensify those efforts.

Notwithstanding those efforts, the industry is committed to implementing BMPs on all lands across the country. It is very important that BMPs should continue to be developed on the basis of State-specific characteristics. Each State has its own special, unique circumstances of land ownership types, land uses, State resources, program costs, existing State statutes, social institutional characteristics.

Because all the State programs reflect those characteristics, AFPA would oppose the concept of allowing EPA to establish a program implementation criteria in Section 304 of the bill for all States based on the demonstrated success in only one State. We would worry in Florida, Senator, what kind of impact that might have on things like this that we have done in our State down there.

We have recently completed a pretty detailed effort—I'll leave this for you—to develop a revised BMP approach with a 22-member task force that met intensely for a 15 month period, consisting of folks from the environmental community, like Bernie Yokel, Judy Hancock—I know you know—folks from the forestry, academic types, agency types to complete that effort for a Florida-specific example.

Although the bill gives discretion to the administrator through the EPA Regents to modify management measures to reflect conditions in the regions, we are concerned that this authority might be unworkable, since even the geographical features within the States of the various regions differ greatly. States, not EPA, must have

the flexibility to devise management measures to address their own special circumstances.

Any non-point source program should avoid having a prescriptive approach to land use planning. We are deeply concerned over the application of water quality criteria and standards provisions to non-point sources.

The anti-degradation section in particular requires designation of any water body within a National forest or water of exceptional recreational, cultural, or ecological significance, including any that supports a population of threatened or endangered species, and would drastically affect our ability, we feel, to harvest timber on millions of acres of Federal and private lands.

We think the bill needs some work at this point, Senator. There may be some things, some references in the bill that may not be intended, but we see some potential problems out there from an implementation standpoint, and how it might affect us directly, the anti-degradation on RWs, to give one example.

I'll be glad to answer any questions in relation to these statements.

Senator GRAHAM. Thank you very much, Mr. Olszewski.

As I indicated earlier, we may be interrupted shortly by a vote. I'd like to start the questioning. Then we will take a round, with each Senator having five minutes to ask questions. Again, I would encourage dialog among members of the panel.

As Senator Durenberger said, one of the key issues here is the intergovernmental issue. As I read through the legislation that is before us, one of the principal areas of alteration is the increase of the Federal role. For instance, there is the provision of National program guidelines that a State would have to meet in its submission of a non-point source pollution program.

I would be interested in your comments, starting with the experience from New York State, as to what do you see as the most appropriate role of the Federal Government in terms of standard setting, and direction to State and local communities in development of their non-point source pollution strategy?

Mr. McGUIRE. Senator, I think we have already outlined one approach. I want to make a very distinct point. I am also a farmer. I not only represent NASDA—one that—I represent New York State as Commissioner of Agriculture.

I have been a farmer all my life. I am a third generation farmer. I have had first hand experience with soil conservation and all the things that go with it. I know of no farmer that intends to pollute. That is one of the problems we are talking about.

There are primarily two or three things. One is the use of fertilizer, pesticides, handling of livestock manure. The thing that happens is that we have the possibility, and in fact have examples of, overuse of any of those commodities beyond the point that the soil on that particular farm can adequately handle it, or that the crop growing from it adequately. So we have something left that can, and is potentially, a pollutant. It may stay there, but in a rain storm or a unique situation, it can be washed off into the streams, and there is where the work is needed to be done to prevent that happening.

Primarily, that is why the whole farm approach is necessary. One, to change whatever practices need to be changed on the farm itself; and two, to construct berms, concrete waterways, grass waterways, concrete barnyards, whatever, other things if necessary, to minimize the potential for run-off under heavy rain conditions, for example.

I want to make one other point though. The food supply for all of us is dependent on less than two percent of the population. I would remind that these people are volunteers. They are not slaves, and they are not government employees. They are individuals. They can choose to farm, or choose not to. We are threatened more in our future food supply by these people choosing not to, than they are from the loss of land, or the resources they use to turn into food.

When they become extremely unhappy with their situation, so that they feel rules and regulations are burdening them to the point where they can't handle it, they are going to do something else. So it is necessary that we work with them, as we have been doing in New York, on a voluntary basis.

They can't be ordered to stay on the farm. They can be ordered to do a lot of things to a point. At that point, I guess they say, "I'll do something else."

My real concern is the next generation. They are already making that decision. We see it all over New York State; we see it all over agriculture across this Country, that they say, "Dad, I don't want to be a farmer." That concerns me greatly.

Let me say that we are doing things—and I think probably because of our population, probably because of our extensive water systems, and lakes and streams, probably of the type of agriculture we have—we have instigated IPM programs to control the use of pesticides, reduce the use of pesticides. We are doing much more in our soil testing, much more in our use of fertilizers. We are doing much more in the continuation of conservation. Now we have a task force, which you will about a little later this morning, on the handling of manure.

I think those things are things that farmers are very willing to do. I think we are going to find that they are going to control the problem to the extent that it can be controlled. I want those to continue.

I think it is necessary that the public is involved in it, not only in a quality water supply, but also in quality food supply. Therefore, the cost of doing some of these things may be beyond that farmer's ability to pay for them. Because of his location next to a stream or a lake, because of the type of operation he has, he has an expense that exceeds other farmers who he is competing with producing that same commodity.

In those kinds of situations, I am very pleased with what we are doing in New York City, where they are sharing the costs of doing those things that are necessary in the public interest. I think it is not in the public interest as far water supply goes; it is in the public's interest as far as the food supply goes.

Senator GRAHAM. Thank you very much, Mr. McGuire.
My five minutes has expired. At this point we will adjourn.

Senator CHAFEE. Mr. Chairman, I just want to say, I think Mr. McGuire has given a very, very powerful speech on behalf of the farmers and this two percent of the population that does such a wonderful job for us. The point that he has made that they can't be ordered around or they might just leave, is one which we all must bear in mind.

I think it is a good statement, Mr. McGuire. I am reminded of a bumper sticker I saw the other day, "If you like to eat, you should hug a farmer today."

[Laughter.]

Senator CHAFEE. I thought it was a good statement. It brought some points home to all of us.

Senator GRAHAM. We will adjourn until we complete this vote. Then we will pick up with Senator Chafee being the next questioner.

[Recess.]

Senator GRAHAM. We will reconvene.

Senator Chafee is called upon for his insightful questions.

Senator CHAFEE. Well, I am not sure I qualify in that, Mr. Chairman, but thank you.

First, I would like to say that both we on the committee, in our opening statements, and most of the witnesses have said that the principal cause of the remaining pollution in our lakes, rivers, and streams is from non-point sources. It is peculiar that currently we provide \$2.4 billion for point-source control, and something like \$50 to \$100 million for non-point source. I am not sure that our actions are meeting our rhetoric around here.

I suppose that one of the reasons that the point source funding is so popular is that it creates jobs. You see something very visible. You see a sewage plant built in a small town that doesn't have one and is suddenly going to get one. Whereas, non-point source controls doesn't seem to create jobs. It is not visible, tangible.

It seems to me one of the problems that has come up through the testimony here is manure management, and just what to do. I know that in my State you are seeing the dairy farms operate with far less acreage than they formerly did. They are buying their hay, in many instances, from around the State. Once upon a time they would take the manure and just put it in the spreader and go out in the fields, and that was the way you disposed of it.

But that isn't true to the extent it once was. Are there any ingenious steps being taken? I noticed in the testimony of one of the witnesses—I think you, Ms. Cameron—didn't you talk about some steps that they are taking in Cornell and elsewhere to do something about that?

Ms. CAMERON. I did talk about the problem of manure management.

Senator CHAFEE. It doesn't quite operate up there on the level with the high culture, but it is a problem.

Mr. APPLETON. Senator, I think it is my statement.

Senator CHAFEE. I think the more subtle way that I think Mr. McGuire termed it was waste management, didn't he? Farm waste, but anyway it gets right down to manure.

Mr. APPLETON. If I could talk a little about that?

Manure is kind of the same thing as sludge. It is bio-solvent. People have the same aversion in talking about animal manure that often you find when you have to talk about sludge that comes from human manure.

I think it is clear from our experience, and it is one of the recommendations in our testimony, that 319 programs are going to have to be brought in to provide for region-wide facilities. We are going to have to take, at least in the dairy industry, some of this manure off the farms and give an environmentally useful kind of product, either by composing or turning it into another product for beneficial use. There is a lot of experience in sludge management that I think could be very applicable here.

The other thing in terms of manure is we are sponsoring some research at Cornell into pathogens. One of the interesting things that so far is emerging from this research is that young animal manure, calf manure, may actually provide a majority of source cysts and other water borne pathogens into the water system. We are looking at maybe setting up as part of this whole farm community plan, because one of the things we have had to do is develop a whole protocol of BMPs for pathogens, maybe requiring calf manure and baby animal manure different treatments, including some kind of thermal process.

I think you need to think about these issues in terms of regions and system-wide areas.

Senator CHAFEE. What do you say, Mr. McGuire? You are a hands-on man.

Mr. MCGUIRE. I think it would be worthwhile.

Because you mentioned it Senator, the evolution of handling manure obviously has followed to some degree the evolution in the size of dairy farms. But you are right, historically, we used to handle it every day, spread it fresh on the land every day. As the size of farms increased, this became a little bit more of a problem. Also, there were some other things related to it.

One is the area that you put it. We used to draw it out and put it in piles, too, which caused a lot of pollution potential from that particular spot. So the evolution has involved handling large quantities in a very short period of time, doing that for labor management purposes, really. That brought around some new problems.

New problems being there is a lot of focus of attention on a lot of manure spread in a short period of time, odor problems, potential pollution problems. A lot of things that had to be done couldn't be done on frozen land, which half of our Country experiences. So they did it in the Spring. Also that is when they plant their crops.

They had a short window between when the frost went out of the ground, and they could put it on the land and plow it under when they planted the crop. After they planted the crop, the window was closed. What do you do with the manure until the next season rolls around? They developed large storage systems.

They have referred to fish kills and so forth. All of those happened from either failure of a storage system, or sabotage of one, which is always potential, and the fact that when you store large volumes of it, and you do have an accident, or something happen to it, you have a sudden flooding situation that results in great damage to the environment, great damage to the wildlife.

The evolution to accomplish one purpose, also causes some new problems. That is why a very speeded up and active group of people in New York State went college and are working intensively on accommodating this and solving these problems. I think there is a lot of research going on.

Senator CHAFEE. My time is up, Mr. Chairman, but I spent a lot of time as a child on my grandfather's farm, and I just want to confirm what Mr. McGuire said, that winters they'd take that manure and put it right out on the fields, and I suppose it was violating best management practices of these days, but in those days it was just the way you got rid of the manure. You took it out and spread it in a very timely fashion.

Your testimony touches on doing some more research, I might have some questions later, Mr. Chairman.

Thank you.

Senator GRAHAM. Thank you very much, Senator.

We have been joined by our chairman, Senator Baucus, and also by Senator Faircloth. If you have an opening statement that you would like to make, please do so.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. Thank you very much, Mr. Chairman.

I first want to congratulate you on your efforts in the subcommittee to address the problems of Clean Water.

It is clear this will be the major environmental bill passed by this Congress this year. You are to be commended, Mr. Chairman, for your very diligent work in helping to put this together. All of us in the Congress, certainly more importantly the people, particularly the groups interested want to express great gratitude.

Mr. Chairman, as we turn our attention to the complex problems of diffuse, or non-point source pollution, it is important to recognize that the causes of the non-point source pollution come from run-off of rain water from urban areas, a wide variety of areas; construction projects, forest harvesting, agricultural lands. It is very diffuse. It is very complicated. It has been a very illusive goal of the Clean Water Act which since 1972 has tried to control it.

While we have made substantial progress in reducing water pollution from point sources, we have not yet in any way solved the problems with respect to non-point source pollution. In developing an effective non-point control policy has been difficult for several reasons.

Non-point source pollution results first from actions of tens of thousands of individuals, making decisions about land management. Many times individual decisions by themselves do not cause pollution. The cumulative effect of these decisions do create significant pollution problems.

Even when the problem sources are clearly identified, Federal, State, and local governments have all been very cautious in the past about asking or requiring change in land management practices. It gets at the very root of land management, which is something that is very difficult to remedy.

In the past several years, however, I think there has been considerable and sometimes angry debate over the extent of the problem and the best solutions. I believe we have a much better chance of developing an effective and workable non-point control program than ever before.

Why do I say that? I am optimistic basically for three reasons. First the recent debates over non-point source pollution have helped all parties gain a better understanding of the issue, and a much better appreciation of the perspectives of others. This was a difficult process. It is one that has been on-going for the last year or two, but it may well have been essential to an eventual solution.

Second, I believe that the bill we have before us is a good starting place. It is a good starting place for our legislative discussions. It builds on existing State programs, and gives States the lead role in addressing the problem. It targets pollution control efforts on impaired waters identified by States. It provides for the development of tailored, site-specific responses to identified problems. It will help prevent the development of new problems from new projects and activities. And it includes substantially increased funding, including cost sharing, implementation of management practices, which on a level comparable to the problem.

Finally, I am optimistic about our chances of finally solving the non-point source pollution problem because those on both sides of the debate are turning from rhetoric to constructive solutions. The environmental community has recognized the complexity of the problem and the time needed to solve it. The agriculture community has recognized that more can be done to prevent water pollution, while reserving the balance between conservation and production.

The legislation we are considering today will help bring the considerable energy and inventiveness of the agriculture community to the difficult problem of protecting the quality of our rivers, streams, and lakes. Working together, government, environmentalists, the agriculture community can fix the non-point source pollution problem.

Thank you very much, Mr. Chairman.

Senator GRAHAM. Thank you very much, Mr. Chairman.

Senator Faircloth?

**OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S.
SENATOR FROM THE STATE OF NORTH CAROLINA**

Senator FAIRCLOTH. Thank you, Chairman Graham.

I am in the unique position of having spent, and am still spending, my entire life in the farming business. It has been a central core of the business life that I have been in for 47 years. I am well familiar with management practices regarding water pollution. I know they have come a long way since I first got into business in Immokalee, Florida, Senator Graham, in 1947.

I want to see a cooperation and not a coercion on the way this operates. I have heard the conversation here today about the handling of manure, and I want to point out that North Carolina has probably come farther in dealing with this problem than any other State. The North Carolina water quality manager is scheduled to

testify at our next hearing. I look forward to hearing to what he has to say.

I read very briefly some of the things Ms. Cameron had to say on waste. I heard Mr. McGuire talking about storage.

As I say, I come from a unique part of the country. We have seen big farms sprout up in that immediate area. Farms that do \$100 to \$300 million in annual sales.

Some of the methods discussed by Ms. Cameron in her statement about how to handle these things sound pretty much like amateur night to me compared to what we have been doing for many, many years. It is inconceivable not to soil test a field for every possible nutrient before you even think about row cropping. We are not in the row crop business, particularly, but some are.

We have spent, on our farms, millions of dollars just getting rid of waste from hog operations, and doing it in a very sophisticated way, on to grass lands. It in turn forced us into the cattle business.

The immediate area that I am in produces something like 35,000 hogs on a daily basis, and somewhere in the neighborhood of 350,000 turkeys on a daily basis. Our handling of the waste is very sophisticated, and comes far ahead of some of the amateurish things we are talking about here.

Ms. Cameron, if I may ask one quick question, has anybody in your organization ever been in farming?

Senator GRAHAM. Senator Faircloth, we are going to proceed through on questions on a normal basis. Then you will have an opportunity ask Ms. Cameron whatever question you'd like to pursue.

Senator FAIRCLOTH. Thank you.

Senator BAUCUS. Mr. Chairman, I have one question.

Senator GRAHAM. I'm sorry, we have been joined by another member of our committee. I am very pleased to see the participation of the subcommittee members on this topic. Again, emphasis on how important the non-point source pollution is.

Senator Kempthorne, do you have an opening statement?

OPENING STATEMENT OF HON. DIRK KEMPTHORNE, U.S. SENATOR FROM THE STATE OF IDAHO

Senator KEMPTHORNE. Yes, Mr. Chairman, I do, and I thank you.

Mr. Chairman, few sections of this clean water reauthorization bill has a more profound effect than those governing non-point source pollution. Timber, mining, ranching, agriculture are the most often named sources for non-point source pollution, and have been the backbone for Idaho's economy for generations.

Each of these industries are under considerable stress right now, in the most part because of decisions made or actions taken by the Federal Government. I am therefore particularly concerned that those steps taken in the area of non-point source pollution control or prevention are realistic and, very important, flexible. They must provide substantial benefit for the cost involved. The requirements must be minimally burdensome.

Additionally, Idaho has moved forward in developing an increasingly effective program to deal with non-point source pollution. The hallmark of Idaho's program is local control, and substantially, flexibility in the development and application of best management

practices because of variations in soil, climate, hydrology, and other factors. I believe that Idaho's best interest in improving water quality requires protection of these strengths in Idaho's program, and the preservation of similar characteristics for non-point source pollution programs in other States.

I have numerous concerns about the non-point source pollution provisions in both title II and title III. We probably won't have an opportunity to address all of them today, but I hope that we can get a start on them.

I appreciate, Mr. Chairman, your efforts on this very important issue, with reference to when now Administrator Browner was before this committee for her confirmation hearings, and we discussed this possibility of building into the system flexibility so that local conditions can be taken into account in order to achieve the standards that have been set.

I appreciated her approach on that, and I look forward to participating with the panel.

Senator GRAHAM. Thank you very much, Senator.

Senator Baucus?

Senator BAUCUS. Thank you, Mr. Chairman.

I'd like to ask a couple of questions of Ms. Cameron, and also Mr. Grubbs. I have two questions.

Basically, first, the enforcement question. NRDC is concerned that as the bill is written that the State does not have the authority to bring injunctions and other similar judicial action with respect to an operator or somebody who is not complying with the best management practices, or if that is applicable, or the State site-specific plan, if that is applicable, or the conservation, or whatever it is.

Would you give us again your concerns of why you think that there should be enforcement included? When you answer that question, I wish you would also address the other side of that coin, namely that we are trying to develop a plan that is going to work here, that is going to have some acceptance by people generally.

I am thinking a bit of the Clean Air Act. Years ago this Congress passed a Clean Air Act that was just too ambitious. It moved too quickly. We had to, in 1990, reauthorize and pass amendments to the Clean Air Act extending time tables and so forth that were more realistic, because States just were not adopting their implementation plans, and communities were not meeting the standards set at an earlier date.

I guess the argument is, wouldn't it be better to set in place a plan or a scheme that people that begins to get acceptance in the State, and among the operators, and so forth, then kick in enforcement at a later date, rather than trying to pile everything on operators all at once in the earlier time-frame?

Ms. CAMERON. OK. I guess I will take a crack at responding.

First on the enforcement part of your question, the bill, S. 1114, does make a distinction between new sources that are required to undertake management measures that are in some way envisioned in the bill to be more of a proscriptive set of measures than for existing sources.

First of all, for new sources, ground that is now pristine in some way, that is going to be broken under new farms, or new logging—

under the bill particularly new logging sites, construction sites—this ground, when it is broken, we feel should be required to have management measures that are not dictating the exact nature of the enterprise, or the exact nature of the land-use, but that are requiring that run-off be prevented as much as possible, to the maximum extent possible. We believe that for every land-use category there are prevention techniques that are known to that industry. The problem is not so much lack of technology, lack of knowledge, as it is lack of consistent, enforceable requirements that are on the books of every State.

For example, local zoning are needed to be upgraded to have prevention based site design for new urban development. That is just one example.

That is one example where that a very strong, enforceable measures and mechanisms need to be in place right away.

Senator BAUCUS. Why isn't the State enforcement sufficient?

Ms. CAMERON. Why isn't State enforcement sufficient?

Senator BAUCUS. Why aren't the State development of site-specific plans sufficient? That is progress.

Ms. CAMERON. We feel that State development of whole watershed plans is very crucial. Then for individual site plans, we like the idea of very flexible site plans. On the site of existing sources we feel that whether there is a required management measure—that is a more proscriptive management measure from EPA—or whether there is an owner-created site level plan, in either case there does need to be a sense that the plan is backed up by enforcement.

Senator BAUCUS. Thank you very much. I see my time is expiring.

Mr. Grubbs, very briefly, please respond.

Mr. GRUBBS. I have a couple of points here. First, it is important to keep in mind that we are not just talking about agriculture in this conversation, but very broad numbers of different kinds of sources, including retail and commercial establishments, foregoing, and so on.

To us, in the administration, the bottom line is environmental improvement here. We are out to see those problems we have been talking about here today disappear over some reasonable period of time.

Where we are coming from is that we want to make sure that what State programs do, and as we approve them at EPA, that they are truly credible. In my tenure as manager of the non-point source pollution program I have seen quite a number of very good and commendable State and local non-point source pollution programs including the one here that was discussed this morning.

But, frankly, there is a lot of cheap talk in this business. Oftentimes, education programs are very broad proposals put together by State and locals that don't really hold water when you get down to it. So what we are really supporting is the approach of S. 1114, where the States would need to have a credible approach to back up the voluntary means where they fail.

Senator BAUCUS. Thank you.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you, Senator.

Senator Durenberger?

Senator DURENBERGER. Mr. Chairman, thanks.

I am glad you made the observation that broadens it, but I am also grateful that we talked a lot about farms this morning. In no place around here do we ever do that. I appreciate that, and in particular Mr. McGuire's comments.

You can add to the list of the things we don't do anymore throwing waste out on the gravel roads, and keeping our wells uncapped, and so forth. But I had a variety of these experiences in the last week or two, going around flooded areas.

There are a couple of things I discovered. Despite what we are trying to do in groundwater and things like that, farmers in my State are afraid to cap their wells, because they have to get a permit. Once they apply for the permit, then somebody is going to come out there and find this, this, this, this, and all the rest of that sort of thing.

The reality is that we are like all the rest of these States. We brag up how much we care about the environment, but the reality is the way these programs seem to be implemented, there is a lot of deep concern on the part of farmers, whether it is feed-lot run-off, or it is a guy who told me, "I am afraid to go and ask them for permission. I have a bunch of uncapped wells. I have three of them. I am afraid of the consequences of what might happen."

I also happen to be reading Jane Smiley's "Thousand Acres." For some reason or other, everybody goes to Iowa these days. The President is going, Grassley is there all day today, so he can't vote. Water covers the State. It is sort of an interesting commentary on how people make decisions in agriculture, but it also says something about what Max said earlier about if there is a problem here you have 10,000 decision makers. When you get into the cities, you have hundreds of thousands decision makers.

Minneapolis is drowning, this beautiful city of lakes. The problem is as serious today as it was 20 years ago, when the then mayor decided to appoint a committee to do something about urban run-off. The problem just keeps getting worse.

One of my observations, and maybe one of your reactions I could ask you for, is the role of the States. It has appeared—at least it is my reaction as I go around listening to people—I think things are broken. Comment on this yourself. Are they broke, and not just in a financial sense. I don't think they work very well. I don't why it is.

I hear more concern; I see better qualified people, if you will, as township supervisors, with all due respect, today than ever before. People are into these programs. They are studying them, and they try to understand them. They go to the conferences and all that sort of stuff. They seem to know what they are talking about. The same is true in these small cities.

So if our concern in going to Washington 25 years ago is that the folks are too busy farming and too dumb to understand how to handle their problems, or something that, it ain't the case anymore. Folks seem to be on top of this stuff at the local level.

But between us here, and them, this mechanism that we are proposing in here to make things work better just strikes as isn't working very well anymore. Maybe one of the other could comment

on what are States doing? What is their role? What should we do to reflect reality?

Mr. APPLETON. Well, as head of the water and sewer authority of the jurisdiction that would be the largest State in the Country, and someone who has worked very extensively in nine upstate counties, I think the real problem you have when you talk about enforcement is you are enforcing the wrong things.

That is, enforcement systems are designed to be uniform, predictable, and that they are based, frankly,—and this goes to Senator Chafee's observation—on a model that you build facilities to meet SPDS requirements. That is a very, simple, easy thing to manage. You have a construction schedule. You meet it our you don't. You have water chemistry. You throw it in a tube. They meet it or they don't.

We are now getting into much more complicated, immediate, and difficult decisions. I see this, frankly, as a problem for all the traditional water quality regulators. Indeed, I am concerned that much of what is talked about in water protection is just old wine new bottles. That is, what you have to enforce is an overall environmental strategy, because if you are going to talk about this best management practice, or this management practice, you are going to be right back in two, three, or four years and with the same model that everyone is increasingly unhappy with.

The other thing is, and I come back to this, people are afraid to deal with the land use issue. They are afraid to make individual site-specific decisions.

Our bureaucrats—and I run a 6,500 person bureaucracy that is a regulator, as well as being regulated—get a lot of comfort out of being able to say the same thing about every single situation. But if 80 percent of your environmental problem is coming of 15 percent of your environmental sources, you have to free those regulators, politically, bureaucratically, and financially, to make individual decisions.

As I said in my testimony, what made our deal work is that we were up there to get clean water, not to run a regulatory system. You have to enforce the right things. States and EPA, I think, are going to all have to go through a cultural change. It is almost like re-inventing government, entrepreneurial government, renaissance in government, where we learn to use local initiatives, but we enforce standards, not methods. It is in my testimony. We have a huge enforcement program. We enforce for objectives, not what this bureaucrat or that bureaucrat has decided is today's orthodoxy about technique.

Senator GRAHAM. Anybody else?

Mr. GRUBBS. Yes. I'd like to add something.

Senator GRAHAM. Mr. Grubbs, Mr. Vap, and then Senator Faircloth.

Mr. GRUBBS. OK. Thank you, Senators.

What we are supporting in this Administration is a State-led structure in section 319. We think that was well conceived to begin with. What we are looking for is a stronger, fuller bottom line here to work with.

One thing to keep in mind is that as the Federal Government, not just EPA, but the Forest Service, the Soil Conservation Service,

and others move forward, that movement needs to be in a way in which States can succeed. A lot of what S. 1114 embodies is the notion of technical expectations for non-point sources, which we think are reasonable.

Just to give you an example of the kind of thing we are talking about, consider site development: We would think in terms of expectations for States to plan, and design, and develop sites that would limit increases of impervious surfaces, and limit disturbances of natural drainages, without specifying to the States exactly how. The point is that States and local organizations need to make site-specific decisions; S. 1114 acknowledges that. To us, anyway, this flexibility is a workable structure.

Senator DURENBERGER. Mr. Chairman, if I don't get back from the OSHA hearing, I'd like to leave a question with you the way in which you get the reactions from the locals to the Federal plan. It is the way you integrate all these Federal agencies that are dealing in a particular area.

Mr. VAP. In response to what are States doing with their environmental protection programs that have been handed to them: The State of Nebraska has statutorily given the responsibility for non-point source pollution to the conservation districts. We call them Natural Resources Districts in Nebraska.

They have given us the responsibility for controlling non-point source pollution. They given us the statutory authority to implement programs, and to actually become regulators. We are doing that in many cases.

So some States are out there accepting their responsibilities and doing the job.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Mr. Vap, you are with the Soil Conservation Service?

Mr. VAP. No, I am with the National Association of Conservation Districts.

Senator FAIRCLOTH. Which represents the Soil Conservation?

Mr. VAP. No. No. We don't represent Soil Conservation Service. We represent the 3,000 Soil and Water Conservation Districts across this Nation.

Senator FAIRCLOTH. OK. The Conservation Districts in every county. Usually they are broken down by counties.

Mr. VAP. Yes.

Senator FAIRCLOTH. All right. Are the soil conservation people into this non-point source pollution question? Isn't that one of their jobs?

Mr. VAP. Very much so. Over the last 40 or 50 years of the existence of soil conservation districts, and the Soil Conservation Service for that matter, it may have started out as an erosion and sediment control program, but basically, if you really look at it, it has been a water quality program for the last 50 years also. Every time you reduce sediment and erosion in the Nation's streams and you reduce the amount of run-off, you are actually protecting the Nation's water quality at the same time.

Senator FAIRCLOTH. Well, that is what I always thought was the purpose of the Soil Conservation, erosion of all types. In fact, it was started in 1934 by Mr. Bennett. Isn't that the man who started it?

Mr. VAP. Hugh Hammond Bennett, yes.

Senator FAIRCLOTH. The Soil Conservation Service was started for erosion and pollution control. Are we talking about somebody to handle this now?

Mr. VAP. This is a point I was hoping I could make. We have the 319 program with EPA. We have had the 1985 and the 1990 Farm Bill, which requires conservation compliance on the part of all farmers in the Nation that receive farm program benefits. We have the coastal zone management program. We have State and local programs for a lot of this type of thing.

We would hope that, whether it is EPA as the lead agency with Soil Conservation Service as the technical provider across the Country, this Committee and the Congress as a whole would take a hard look at how you could integrate all of these programs so that we don't come up with six or seven duplicative sets of paperwork and programs for the cities and farmers across this Nation to comply with.

Let's get it all under one program of some sort so that it will be easy for the landowner, the conservation district, the State agency, and all these people to find out who is going to tell them what they have to do and when, and get these programs together so that we are not in total confusion most of the time as to who is responsible for what.

Senator FAIRCLOTH. Does not Senator Bond have a bill in this direction?

Mr. VAP. I am not sure. I couldn't answer that.

Senator FAIRCLOTH. I thought he did.

I have worked with the Soil Conservation Service for many, many years, and am well aware of what it does and how they do it. They have, like so many of us, been misguided at times. I guess the greatest drainage in this Country, the demolition of wetlands was paid for by the Soil Conservation Service. Canals by the hundreds of miles—I dug them—with drainage of wetlands by the Soil Conservation Service.

But, still it is there. It is functioning. It is in contact with the farmers in most counties. It is associated with the ASC offices, where the money comes from. It looks as if, without creating a new bureaucracy or more people, it would be absolutely simplistic to tie the Soil Conservation Service with the ASC, where the money comes from—the support programs are handled through ASC—and work them together. If you were not getting the cooperation with the Soil Conservation Service in run-off, manure, over-fertilization, or whatever the problem was, then you simply cut off the support payment or whatever might be.

Is that an overly simplistic approach to how to handle it?

Mr. VAP. It may be possibly, but we look at the Soil Conservation Service basically as the provider of technical services and advice to the land operator and farmer out there. They are not just dealing with agriculture these days. They also deal with cities and urban conservation. So they really are the technical provider for non-point source throughout the entire Country.

We would hope that in re-organization of the Department of Agriculture that we don't just throw SCS and ASCS together, so that technical expertise is diluted. We would like to see SCS still remain

the technical provider; ASCS the financial entity for that farm program at least.

Senator FAIRCLOTH. Why would it dilute it if you put it together? I mean are they going to forget how to run an instrument, or why would it dilute it?

Mr. VAP. There has been some talk about cross-training of all employees so that they are experts in handling the financial end of it, and the financial people know how to run a transit, and lay out a set of terraces, and that type of thing, and answer all the questions involved from both entities. That is why we wouldn't like to see them put together.

Senator FAIRCLOTH. That sounds like a bad idea whose time hasn't come.

Mr. VAP. OK.

Senator FAIRCLOTH. Ms. Cameron, there is just one thing.

I noticed that in your paper, you talk about kilograms and hectares. Why? How many farmers do think deal in hectares and kilograms out side of Australia?

Ms. CAMERON. I'm sorry. Which particular part of the testimony? I don't have my copy.

Senator FAIRCLOTH. Here it is.

Ms. CAMERON. Which particular part, if you could just refresh my memory. OK. OK. Hectares.

Very often, in USDA technical reports, and so forth, or of USGS or other kinds of Government reports, we are simply quoting from those government reports here. They use those units.

Senator FAIRCLOTH. Well, that is what I was talking about. They usually write them so nobody can understand them.

[Laughter.]

Ms. CAMERON. Mr. Faircloth, if I could respond to a question you posed to me earlier about do we have farmers in the Natural Resources Defense Council. I do not know of any farmers on our staff, however, I myself have visited several farms over the past year in Maryland, in Ohio, and I have been very impressed with the work that conscientious farmers are doing to protect water quality. Our basic policy on the question of non-point source pollution is that we would like to have the work of these conscientious farmers come to its best effect by having whole watershed programs where their neighbors all start to pull their weight.

Senator FAIRCLOTH. I think you will find that most of the agriculture community in this Nation is conscientious, and very sensitive to the pollution problems, and are working very diligently to handle them and do something about them. From my standpoint, I don't feel that we need any further rules, regulations, or inspections.

Senator GRAHAM. Senator Kempthorne?

Senator KEMPTHORNE. Thank you, Mr. Chairman.

Mr. Olszewski?

Mr. OLSZEWSKI. Pretty good, Senator. Olshefski.

Senator KEMPTHORNE. Olshefski? May I call you Robert?

[Laughter.]

Senator KEMPTHORNE. You may call me Dirk.

Under S. 1114's provisions covering the anti-degradation policies, each State is required to designate, "the outstanding National re-

source waters." The definition in the bill includes waters within, and I quote, "a National park, wildlife refuge, wild and scenic river systems, wilderness areas, National seashores, and lake shores, or National monuments." Then the designation also extends to waters of "exceptional recreational, cultural, or ecological significance," or those that either supporting or are threatened by endangered species, with regard to water systems.

How does this speak to the reach of this provision? Does it also reach waters outside of these designated areas by virtue of the fact that the waters flow through a National forest or wilderness area?

Mr. OLSZEWSKI. We are not sure. We suspect that it is fairly broad based in nature, Senator, from the language you just described. We really don't know what it would mean in terms of implementation when we state in the bill that ONRWs would include any water that supports a population of threatened or endangered species. That could be pretty broad based. Everyone needs to understand what it means when you do have a water designated in an ONRW status. That leads you to have these anti-degradation provisions apply to those waters.

Now, in the past, when ONRWs have been designated, and the EPA regs today, allow for some temporary impacts to occur in ONRWs to the point where we have been able to conduct forestry operations to some extent in ONRWs. The way the language is right now, we don't see that opening for us at all to conduct forestry operations.

Although BMPs are great, and they do a good job, certainly there are certain really intensive storm events, certain events that could have some temporary minor impact on a water body, or water course. We are concerned that the way this section is crafted in the language of the bill right now, it might really restrain any kind of activities from occurring. I am not sure that is the intent, but when we look at the language right now, that is how it looks to us.

In addition, we are not sure how this ONRW designation would impact land outside the public lands you described; upstream, downstream of National forest and of other public lands. Would they be included in the ONRW designations? We are not sure.

Even without that, the potential impacts just as far as the National forest system are concerned could be pretty extensive.

Senator KEMPTHORNE. Yes?

Mr. GRUBBS. I would like to add that at EPA we have some concerns in this area as well, as we testified two weeks ago in a toxics hearing. This is in an area where we think we do need to do some more work to think through the implications of these requirements, and would very much like to continue to work with the subcommittee staff as you move forward on this one.

Senator KEMPTHORNE. Good. I appreciate that.

Mr. Appleton?

Mr. APPLETON. Two things. One, I think we have some concerns about the concept of the ONRWs, that it will not be available for the protection of water sources, particularly an unfiltered water supplies like New York City, that provides water to one out of every 30 Americans. This raises the larger issue of coordination of the Safe Drinking Water Act goals, or the Clean Water Act. The

Clean Water Act administration in the past has not paid enough attention to the implications for drinking water.

The only other concept I would add to the ONRW debate at this point, going back to my testimony, is not every non-point source pollution problem can be dealt with by best management practices. There are some areas where we are going to have to accept the fact that they will need to be left alone. It is one of the reasons the City of New York is committing so much money to land acquisition and core basins around reservoirs and stream corridors in our watershed. If we are going to be serious about non-point source pollution control, we need a full plate. Any degradation should be part of that plate.

Senator KEMPTHORNE. Mr. Chairman, I am about out of time.

One other issue that I wish to just touch on was provisions of this bill substantially expand the use of citizens' suits. I was just interested in any panelist's response as to the merits of this approach in trying to reach enforcement.

Senator GRAHAM. Are there any members of the panel who wish to comment on that?

Mr. McGuire?

Mr. McGUIRE. I am not sure I can comment directly to what you said, but I will just tell you that farmers, and particularly livestock farmers, feel very vulnerable to this kind of a situation. They do because oftentimes the concern of neighbors is focused on something different than water quality, and have decided that either they don't like the looks of the farm; they don't like the smell of the farm; they don't like the noise of the farm; and not having any specific regulations that those three things are violating, they then look for how can he be shut down, or moved, or closed up or whatever, and end up with the water quality standards which are more specific and more available to them for citizens' suits.

So I think it provides a convenience, and a conveyance of them to get into the action to control the problem that they don't like with a law that gives them that opportunity. Farmers feel very vulnerable to that.

Senator KEMPTHORNE. Thank you.

Ms. Cameron?

Ms. CAMERON. I have not analyzed the citizen suit provision of the bill, but I just would like to have your permission to make sure that we do provide comment to the committee, either from my organization, or through one of our fellow members of the Clean Water Network on that particular issue.

Senator KEMPTHORNE. Good.

Senator GRAHAM. I might say, Senator, that we are going to have a separate hearing on the issue of enforcement. It is at that time that we anticipate a major focus on the issue of citizen suits as one of the means of enforcement.

Senator KEMPTHORNE. All right. Good. I will look forward to that. I would welcome your comments, Ms. Cameron.

Ms. CAMERON. Thank you.

Senator KEMPTHORNE. Thank you, Mr. Chairman.

Senator GRAHAM. I'd like to go back to the question that I asked initially, which was does this bill Federalize, that is move to the National level, too many decisions that currently are at the State

level? I would like to pick up on the comment that Mr. Appleton made as illustrative of my concern.

I happen to be a strong believer in land acquisition as a strategic way to deal with non-point source pollution problems. In our State of Florida we have had for many years what is called the Save Our Rivers Program, under which literally thousands of acres have been purchased to provide a natural system buffer for our principal river systems.

This legislation provides a restriction on the amount of the funds that flow to a State which can be used for land acquisition, including the purchase of conservation easements as well as fee-simple titles. I point to that as illustrative of the kinds of additional restrictions that this proposal would impose on States.

I'd like to ask the generic question, what should be the level of Federal proscription in terms of standards, State procedures, State utilization of Federal funds that are made available through this Act? I would like, as the basis of that comment, what our past experience has been? Have States been levels of government in which we cannot rely on a high level of responsibility, and are these additional restrictions therefore required to accomplish the National objective of water quality?

Mr. Grubbs?

MR. GRUBBS. I wasn't sure if you wanted to hear from a Federal bureaucrat on this one.

My view is that we need to recognize successful State programs where they have succeeded. There are quite a number. You don't want to do anything in this process that takes away what States have been able to accomplish.

At the same time, 57 States and territories is a huge land area. There are a lot of differences in those areas in how things move forward. My own experience is that there needs to be more to the Federal role than just providing freedom and Federal funding.

Carol Browner, as you know, formerly headed the environmental agency in Florida, and is fond of talking about the difficulties she had in pollution problems coming from other States across State borders and that she needed Federal support to help her move forward toward more uniform programs to deal with those kinds of problems. That is one example that you might think about.

The trick on this is going to be, as we move forward, not at the State level, but at the county, the conservation district, and the local level, to make sure that you don't take anything away from the successes and the commitment of people trying to succeed voluntarily because it is the right to do. Rather, what you are doing is you are firming up your bottom lines. You are taking care of the places where the system has failed. I think that is what EPA can and has added.

MR. APPLETON. Senator, may I add to that?

It makes me nervous when I hear in Mr. Grubbs' and others' language the imposition of standard technological bases. I want to caution this committee against what is a reculturalization that all of us who are in the clean water business have to go through. What is important about S. 1114 is that in its watershed provisions it is trying to grapple with the issue of what are the appropriate institutional arrangements for the future.

What I would be concerned with is Federalizing, essentially, a non-point source approach that is based on essentially NPDES-type administration and technological standards that are uniformly required. The right Federal role is very tough goals. The right Federal role is funding support, including for land acquisition. We have not discussed research here, but there is an enormous need in these billions-of-dollars decisions to have them guided by the right research. The right Federal role is in interstate areas and harbors, like those shared with New York and New Jersey, and intervening when it is clear that is the only other choice.

States have experienced a similar weaning from top down management of these areas. We go back to our experience with Dick. It was the farmers who came to us, not we who came to the farmers. That is not possible, or at least it would be very difficult without an enlightened governor, under the current S. 1114 watershed approach. Those enlightened farmers, those enlightened forest companies are going to have a very difficult time making their case in this system that still flows top down.

I think it is less a question of Federal and State, as it is of what we ask them to do. Are we going to be entrepreneurial about this? Are we going to gamble on being successful? Are we going to have the measured approach Senator Baucus was talking about? Or are we going to recreate SPDES for the non-point source area? It seems to me that is the critical issue we have to discuss here.

Senator GRAHAM. Yes, Mr. McGuire?

Mr. MCGUIRE. Because of my background, I may get more basic in the approach here than I do technical, but so be it.

Let me say that this whole discussion boils down to money. Mandates on the Federal level, State level down to the county localities—who is going to pay for it?

I do not think that anything ought to be used to avoid the issue. On the other hand, I perceive that we are in grave danger of first misidentifying the problem, and then misidentifying the solution to it. History has said we have spent a tremendous amount of money by governments of all levels and not accomplished anything.

As far as the purchase of land—we have a lot of discussion in New York State about protecting land either by buying development rights—we have a long history of it on Long Island—or by buying land for protection of water supplies, buying land for scenic beauty. The problem always boils down to who appropriates the money, and is it in the public interest, and does it accomplish what we are after?

I am confident that in the land purchases around the reservoirs in the Catskills this is an appropriate expenditure, particularly because of the development in those areas. I am not sure that appropriations of money at any level of government that take land out of production, to land out of private use, to take land off the tax rolls, is an appropriate expenditure of public money, unless it is absolutely verified as to what it accomplishes whether it is pollution or something else, whether it accomplishes the purpose.

So in that whole area of mandates, it comes to the forefront that we have budget problems in New York State. Historically in the last decade our legislature has passed laws that say, we haven't got

any money to pay for it, but we are going to have the counties pay for it. The Federal Government does the same thing.

The senator who isn't here now is absolutely right. The whole system is broke, because we have spent money on things that did not accomplish the purpose that they were intended for, maybe because of misidentification of the problem in the beginning. I think that this is a very appropriate discussion by your committee in this area on non-point source pollution, because it is not as identifiable as point source pollution is.

It is a gray area all the way through. I think that is why we have to have people involved such as this approach we have made in New York State. Those closest to the problems are going to come up with the best solutions. They even may make mistakes, but I think we will have minimized the problem.

Senator GRAHAM. My time is up.

Mr. Grubbs, if you would like to make a final comment, then Senator Baucus will take a turn.

Mr. GRUBBS. Thank you.

I just want to try to correct one misimpression that may be left here at the table. That is that neither I, nor anybody at EPA, is advocating a State permit, NPDES-style program for controlling non-point source pollution. That is not what we are talking about here. We are talking about much broader guidance, a lot of flexibility for States to adopt it, backed by funding. Specifically, we do support watershed approaches with a lot of freedom that States and local areas can concoct to achieve water quality. I don't think the analogy to a State permit program is correct.

Senator GRAHAM. Senator Baucus?

Senator BAUCUS. Thank you, Mr. Chairman.

Mr. McGuire, does this bill misidentify the non-point source pollution problem? Does it identify correctly or incorrectly in your view?

Mr. MCGUIRE. In its breadth, it obviously misidentifies some problems.

Senator BAUCUS. First of all, what does identify correctly, and what in your view does it identify incorrectly? That is the bottom line.

Mr. MCGUIRE. For example, in almost any pollution problem or residue problem or any thing else, it is very easy to attack the major obvious positions. I think it has already been said that the point source pollution things did that.

Senator BAUCUS. We are not talking about point source. We are talking about non-point now.

Mr. MCGUIRE. In this one it is going to be extremely difficult, and not advisable on a risk-management basis, to control all of it. I think that voluntary compliance and the best practice management is going to control more than regulation.

Senator BAUCUS. There are some who say this bill doesn't go far enough because it doesn't control all of it. We have some witnesses here who would make that point.

Mr. MCGUIRE. Who is ready to pay for that?

Senator BAUCUS. So we are attempting to get a balance here, to some degree, not entirely, but to some degree, between those who think it doesn't and should control all of it, and those who think

that maybe we shouldn't control very much of it. That is why I asked the question whether the approach in this bill is in your view correct.

Mr. McGUIRE. Senator, excessive controls without the money to carry them out is not in the public interest. As I said, perhaps before you arrived, we have less than two million volunteers out here producing food. Voluntarily they will decide not to, if the excessive cost puts them out of business, or the excessive regulations. I don't think that they are going to be able to keep up.

Senator BAUCUS. This is to Mr. Vap, and also you, Mr. McGuire. Some claim that the conservation compliance plans are insufficient. That is they control only run-off and soil erosion and not other water quality matters. Your response?

As you know the bill provides conservation compliance plans in some instances a sufficient. That is, in waters that it identifies as impaired, an operator who has a conservation compliance plan, then he has complied. Others though, say that is only part of the problem. It is insufficient. Your response?

Mr. VAP. That could be partially true. When we look at, for example, nitrate contamination of either surface or groundwater, the easiest place to control the application of nitrate fertilizer is controlling the amount the farmer puts on. But a good thunder storm will produce more nitrogen than most farmers put on in a year.

Mother Nature provides a lot of nitrogen through the decaying vegetation. In many areas of the country there are natural nitrate levels underground that have been there for centuries, and they also degrade.

So the compliance plans may not necessarily control all of that type of degradation.

Senator BAUCUS. My question, though, is should the requirement in the bill go beyond conservation compliance plans, or not?

Mr. VAP. On a site-specific basis?

Senator BAUCUS. Yes, site-specific.

Mr. VAP. Yes.

Senator BAUCUS. What would you add? How would go about adding for that?

Mr. VAP. Well, you are looking at non-point source pollution.

Senator BAUCUS. Yes, non-point source pollution.

Mr. VAP. Are you strictly looking at the farm community?

Senator BAUCUS. Looking at an operator who is on a stream identified as impaired. He has his conservation compliance plan, but I am asking you should that be sufficient, or should that plan also go beyond that, because that is addressing essentially solid erosion.

Mr. VAP. If we are looking at soil erosion, and that compliance plan is working the way it is supposed to, then I don't think you need to go any further. But if that stream runs through a city, are you going to totally blame the farmer for degradation of that stream?

Senator BAUCUS. So you are thinking if it is living up to the terms of the plan, that should do it.

Mr. VAP. I think so, if he is controlling the run-off off of his land with a good solid conservation compliance plan, I think that is sufficient.

Senator BAUCUS. What is your response to those who say that it doesn't address other water quality matters?

Mr. VAP. What are the other water quality matters?

Senator BAUCUS. It isn't just soil erosion. Let's say it gets into nitrates, which is a non-erosion issue.

Mr. VAP. It is to a certain extent.

Mr. MCGUIRE. Nutrients don't leave the soil unless they attach to particles that leave with it.

Mr. VAP. That is right.

Senator BAUCUS. OK.

Mr. VAP. You have to have run-off to degradate a stream with nitrates. That doesn't mean that nitrates can't get into the ground-water supply.

Senator BAUCUS. I'm asking Ms. Cameron that, because I am sure she has a little different view.

Ms. CAMERON. Yes. In our view, the conservation compliance plans are useful, and we have a conditional support for the provision in S. 1114. That is we believe that giving exception to farmers who have a conservation compliance plan is a good idea to the extent that sediment erosion is the problem in the watershed. As you were alluding to, Senator, there are other potential problems, or existing problems in many watersheds.

We believe that on a watershed, or at least on a water segment limited basis, although we believe that the proper management unit is the whole watershed, the process should begin with identifying the problems. The problems are, for example, nitrate contamination of groundwater, and if the States and the local authorities have identified farming management of manure as one of the significant nitrate sources, then that there needs to be more done than the conservation compliance plan.

Perhaps that plan could be the basis for revision. In other words, perhaps that plan could be the vehicle for a conservation district person, or a State person, to help the farmer come up with an additional component to address that manure management issue, or the fertilizer use issue.

Senator BAUCUS. I appreciate that. My time has expired.

I just think it is important in this entire discussion, as we are attempting to achieve perfection. That is a conservation compliance plan satisfaction might be perfect, but I think it is good.

Mr. MCGUIRE. Senator, I think your balanced approach is good.

Senator BAUCUS. What we are trying to do here is trying to find something that is very, very good, moving as close as we can to perfection, but still getting something passed that does advance the ball substantially forward.

Again, we must remember that sometimes the cause of perfection is the enemy of the good. We can't all have everything at once.

Ms. CAMERON. If I may respond that we realize that this is a long journey that we just now really beginning, with the Senate bill, and also with the Oberstar bill, that we are supporting on the House side, H.R. 2543. In both cases, we are contemplating very long time-frames on the order of close to a decade, or more than a decade for the undertaking of the plans.

Senator BAUCUS. Thank you.

Thank you, Mr. Chairman.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. No questions. I think the part of Mr. Appleton's statement, where he goes through these three points are worthwhile for us to bear in mind.

We have some other witnesses coming up I look forward to seeing and hearing from.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. I just have one brief question.

Mr. Vap, isn't a comprehensive soil conservation plan required for every farm now coming up in 1992 or sometime very quickly to continue in ASC programs? Don't you have to have one?

Mr. VAP. That is the basis of the conservation compliance plans, that by 1995 they are to have that plan up and running and working properly to be eligible for any farm benefits, not just ASCS, that is also FMHA.

Senator FAIRCLOTH. What is FMHA?

Mr. VAP. The Farmer's Home Administration loans.

That also keeps them eligible for Federal Crop Insurance and programs of that type. If they don't comply they can be totally put out of all farm programs and benefits.

Senator FAIRCLOTH. That is what I thought, that we had this coming up. That sounds to me like a pretty tight rein on run-off and other things. As for the amount of nitrogen a farmer puts on his land, I don't how we could ever control that.

Mr. VAP. We are doing it on a local basis.

Senator FAIRCLOTH. How do you do it?

Mr. VAP. Our district has statutory authority to do that.

Right now in our district they have to report to our local district the amount of nitrate that is being put on there.

Senator FAIRCLOTH. It is an honor situation.

Mr. VAP. It is basically an honor situation in the beginning, yes.

Senator FAIRCLOTH. Mr. McGuire, you are talking about the nitrogen in the water, and we talk about run-off, but the difference between the amount of absorption of land, the ability of it to leach nitrogen is just astronomically different from Sulfur County, in Riverhead, Long Island to the clay of Dutchess County.

Mr. MCGUIRE. The same difference in crops being raised out here.

Mr. APPLETON. If I could also make one point where a watershed approach could really be helpful here. We really need to look at nitrogen loading as a totality. In the watershed, phosphorus is actually the nutrient of concern for us.

Then start looking at where you can take nitrogen loading out, or phosphorus loading out, of the waste stream in the most cost effective fashion. One of the concerns, again, I have is that if you just apply these standards source by source, and you are taking an overall approach, you will not get to the question of where is it most cost-effective for us as regulators and managers to intervene.

In our Cannonsville Reservoir, which is our most phosphorus stressed, we have set up a task force of State agencies and the local community to look at where we can get phosphorus reductions in the most cost effective and most locally acceptable way. We are already at the eutrophication limit.

By creating an overall watershed phosphorus plan we can then reduce phosphorus below the loading limits. Then we don't have to be Draconian in a way that treats each farm or each source in isolation.

Senator FAIRCLOTH. Thank you.

Senator GRAHAM. Thank you very much, Senator.

Thank you members of this panel for a very excellent and insightful discussion.

Incidentally, there may be some questions that members of the subcommittee would like to submit subsequent to this hearing. We would appreciate your consideration and response. Those responses will also be incorporated as part of the record.

Mr. APPLETON. Also, Senator, if I might? We would like to submit comments on the watershed hearing. We believe, in our experience, that some testimony directed toward that might be helpful.

Senator GRAHAM. We would be very pleased to receive that.

If the members of the second panel would please come forward, I will introduce them.

Mr. Willard De Golyer, dairy farmer from Wyoming County, New York; and Dr. Stanley Weeks, Director of Farm Systems Research Product and Development, of Syracuse, New York; both representing the National Council of Farm Cooperatives.

Ms. Judy Olson, Vice President of the National Association of Wheat Growers, from Garfield, Washington.

Mr. Paul Genho, Chairman of the Private Lands and Environmental Management Committee, representing the National Cattlemen's Association.

Mr. L. Scott Tucker, Chairman of the Stormwater Committee, National Association of Flood and Stormwater Management Agencies.

Mr. Robert Warrick, a farmer from Nebraska, who is chairman of the Sierra Club Committee on Agriculture, affiliated with the Sustainable Agriculture Working Group was not able to be with us today. I would like to ask Ms. Cameron if she would join this panel as well, in order to respond to any questions from the aspect of the environmental community.

Ladies and gentlemen, we are going to have to conclude this hearing in 55 minutes, at 1:00 p.m. I would like to call on you for an opening statement. We would like both comprehensiveness and brevity, so that we can move on to the questions.

First, Mr. William De Golyer and Dr. Weeks.

STATEMENT OF WILLARD De GOLYER, DAIRY FARMER, NATIONAL COUNCIL OF FARMER COOPERATIVES

Mr. DE GOLYER. Thank you, Mr. Chairman and members of the subcommittee.

My name is Willard De Golyer, and I am a third generation dairy farmer on Table Rock Farm. The fourth generation, my daughter Megan, is sitting behind me.

Senator CHAFFEE. Where's Megan? Let's see her.

Mr. DE GOLYER. My uncle and I, and our families, have a milking herd of 650 cows, and plant 800 acres of corn and alfalfa on our

farm located south of Rochester, New York. I'll pass around a copy of my farm's mission statement.

I am an active member of Agway, our regional farm cooperative. Agway, which is headquartered in Syracuse, New York, is owned by 91,000 farmer members in 12 northeastern States. I frequently turn to my cooperative for information and technical assistance on environmental concerns.

Accompanying me is Dr. Stanley Weeks, who is director of Agway's farm research systems and product development. Dr. Weeks is an internationally recognized expert in the science of manure management, not a glamorous topic, but one critical to making water quality progress. Among his many notable contributions is development of a biogas system approach to dairy manure management.

We pleased to testify today on behalf of the National Council of Farmer Cooperatives, which represents farmer-owned cooperatives across the United States, and to share our views on the reauthorization of the Federal Water Pollution Control Act.

Farmers and their cooperatives have a great deal at stake in the water quality policy debate. We are committed to playing a positive role in the search for effective solutions. I would like to submit our prepared statement for the record, and then touch on a few points.

First, successful policies will achieve management of non-point source pollution from agriculture, while at the same time allowing farmers to stay in business. Second, I keep hearing this talk about bad actors, while the farmers I know are generally trying to be good actors. Our families, animals, and farms are among the first to be affected by poor water quality. We work to use the best management techniques to ensure good water for everyone.

Third, we are going to need help in getting there. Farmers' basic needs include sound information on what works; technical assistance; and finance assistance to achieve site-specific best management practices. We get this kind of help from people like Stan. We also rely on the Land Grant universities for information. However, funds for this type of non-profit based research have been drying up.

S. 1114 goes a long way in responding to the special needs and concerns of American agriculture. It seeks to establish a good actor partnership between agriculture and government in targeting impaired watersheds, and it places states in a lead planning and implementing role. Farmers would be given the flexibility to implement site-specific best management practices.

The bill also gives credit to farmers if they have a conservation compliance plan. Additional requirements will not be imposed on Farmers where the water supplies meet water quality standards.

In general, we believe S. 1114 is a good foundation on which the subcommittee can build toward final legislation, allowing farmers like me to work with experts like Dr. Weeks to get the job done.

Now, as we stated in the written testimony, we do have a few concerns and suggestions to improve S. 1114. These include increased funding, allow time for voluntary programs to work before conducting evaluations, link agricultural accountability to performance on part of states and funding levels, ensure flex guidelines in Section 304 programs, make sure biological monitoring refines and

does not increase existing water quality standards, and allow Soil Conservation Service to be the lead Federal agency in dealing with agriculture in this area.

I'd like to emphasize one point particularly. If you are looking for reinforcements to help get this job done, cooperatives like Agway are uniquely positioned to be part of that solution. Cooperatives work in partnership with farmers and ranchers who are their member-owners, as they strive to address non-point source pollution and other environmental challenges.

We in the Agway system are particularly excited about advances in animal manure management at our research facility. I hope Dr. Weeks will have the opportunity to offer some highlights during discussion.

Cooperatives by definition are self-help organizations. Today four out five farmers belong to one or more cooperatives. In the search for water quality solutions, we hope you will look for ways of bringing the cooperative community in as part of the solution.

Senator GRAHAM. Dr. Weeks?

STATEMENT OF STANLEY WEEKS, DIRECTOR, FARM RESEARCH SYSTEMS AND PRODUCT DEVELOPMENT, AGWAY, INC., SYRACUSE, NEW YORK

Dr. WEEKS. Thank you, Senator Graham and members of the subcommittee.

Just briefly, let me talk for a few minutes about our friend, the dairy cow. Our research farm, located in Central New York, is actually a cooperative research farm. The animal nutrition work that goes on at that research farm is supported by 12 farmer-owner cooperatives in the U.S., Canada, and one in France. That information is shared with the other 11 cooperatives.

We milk 250 cows a day there. So we are a real farm, and we test equipment systems prior to sales to our farmer members.

Our approach to manure management is a systems approach. It clearly is a major materials handling issue. Let me briefly describe our approach.

First of all, we recognize that manure is a resource worth about \$100 per dairy cow per year as a fertilizer source. So let's begin with the cow.

Our cows lie on mattresses. They are stuffed either with sawdust or shredded rubber. That gives the cow comfort, and that reduces the amount of bedding required to be purchased.

We use automatic scrapper systems to remove manure from the barn. That gives us clean cows to be milked, and it is a very energy efficient system.

We use liquid-solid separators. They are German-made units. The Europeans are a little bit ahead of us in these environmental concerns. This German-made unit separates the manure fibers from the liquid.

We compost the solids, all those solid fibers for bedding. We can use it as a soil amendment product. It is also a potential cash crop from the dairy operation.

The separated liquid then goes to a long-term liquid storage. That is our fertilizer source. That can be remote from the barns

and central to the fields. That reduces transportation time and cost, and we like to have a six-month storage in our part of the Country, so that we don't have to spread on frozen land. We can spread in the Spring and Fall, and incorporate especially to save the majority of the nitrogen portion of that fertilizer.

Since 1981 we have operated an anaerobic digester, our information for building that digester came from three Land Grant universities; Cornell University, Penn State, and the University of Missouri.

That is an odor control system, basically, but it also is an energy production system. We know how many kilowatt hours each dairy cow will produce, as well as how she will eat, and how much milk she will produce. It is probably the most effective method of odor control. A lot of our neighbors equate odor with pollution. So that is one of the major reasons that we work with digesters. It also produces methane from that manure, which we then utilize so we burn the methane instead of letting it go in the air. The overall systems economics still need to be evaluated farm by farm;

In the end result, proper land application is the key for adequate manure handling. In our area, the Soil Conservation Service and Land Grant colleges are very important allies in designing and in providing information on manure handling systems. I would strongly encourage more support for both of those organizations.

To summarize, animal manure is an important fertilizer resource, but we must store and apply it properly.

Senator GRAHAM. Thank you very much, Doctor.

Ms. Olson?

STATEMENT OF JUDY OLSON, VICE-PRESIDENT, NATIONAL ASSOCIATION OF WHEAT GROWERS, GARFIELD, WASHINGTON

Ms. OLSON. Thank you.

I am a wheat farmer from Garfield, Washington, as you said in my introduction. My husband and I farm there, have for the past 20 years. I am speaking today on behalf of five additional commodity groups. I appreciate the opportunity to comment on the non-point source title of S. 1114.

We are pleased that the legislation emphasizes the importance of watershed planning, local ownership of watershed projects, and the site-specific approach, which we think is very, very important. But, this philosophy must be made practical from a farmer's point of view, if we are going to make substantial improvements in the quality of our natural resource.

They must also include realistic time-frames. One of the points that I make in my written testimony and I would like to highlight is the fact that voluntary programs do work within agriculture. We have had many comments today on many examples. There are four additional examples in my written testimony about how voluntary programs are implemented on farms by farmers.

A big component of voluntary programs by farmers on farms has to do with technical assistance, education, and research. I feel very strongly, as do the groups that I represent, that farmers when they are aware of a problem in their local area, watershed in this in-

stance, buy into that, or accept local ownership of problems. They are problem solvers inherently.

So we need education to identify the problems. We need technical assistance and research to identify cost-effective, workable solutions within the region that has a problem and to address those problems. That is where technical assistance fits in to the voluntary component. Those things go together very, very closely.

After we have the technical assistance, the research, the education, then we need some additional assistance, or education, to make that transfer back to the farmers through demonstration projects. We have cooperative extension service; we have local soil conservation districts; both play a very important role in that technology transfer back to the individual farmers.

It has been my experience in my own county that most farmers, once they see a better way to do something, they readily adopt the new practice. I live in a very highly erodible county I farm in the Palouse region where virtually every acre is classified as HEL. We have been working for probably 40 years to reduce erosion of those highly productive soils. Farmers voluntarily have done that because it is in their own best interest. We continue to adopt new technologies. This is an on-going process; it is not something that you can say; "This is the answer". It is an on-going process as we become more familiar with the causes, the effects, and new equipment and techniques are developed.

The other point I'd like to make is that we believe very strongly in local solutions to local problems. Water quality is a local problem, especially where non-point sources occur. We believe that the stake-holders in that watershed have a vested interest in protecting the quality of those waters and improving it, and will be voluntarily involved in that solution, given an opportunity to do so.

We believe that the solution should come, basically, from the bottom up.

Realistically, farming cannot be done by a National environmental protection agency handling it. We have learned some very valuable lessons with conservation compliance in the 1990 Farm Bill. Many of those lessons were good. Some of those should be a guidance to this committee as to what works effectively, and where some things could be improved.

One-size-fits-all does not apply to agriculture. We have different soils throughout the Country. We have different weather conditions, climatic conditions, and different needs. The local unit, again, is best able to identify the needs and the most effective practices. Therefore, we feel that EPA guidance on this matter is probably very inappropriate.

We also believe that five years is not long enough to have the value and the merit of the conservation plans, which actually are coming into effect but aren't required to be into effect until 1995, to be thoroughly analyzed, evaluated, and the results known. We would like to commend the committee for drawing the correlation between conservation compliance plans and water quality. We think that will be a valuable tool to help us address water quality, but we feel that those plans need a little longer to work, that the results need to be made known to farmers before they are required to add additional management practices.

With that, Mr. Chairman, I would like to thank you for your consideration, and would welcome any questions at the appropriate time.

Senator GRAHAM. Very good. Thank you, Ms. Olson.
Mr. Genho?

STATEMENT OF PAUL GENHO, CHAIRMAN, PRIVATE LANDS AND ENVIRONMENTAL MANAGEMENT COMMITTEE, NATIONAL CATTLEMEN'S ASSOCIATION

Mr. GENHO. My name is Paul Genho. I am a rancher from Florida, and also chairman of the Private Lands and Environmental Management Committee of the National Cattlemen's Association.

The National Cattlemen's Association is the voice of cattle producers nationwide. We represent 230,000 cattle producers across the Country through 76 affiliated organizations.

We appreciate very much the leadership shown by Senator Baucus and Senator Chafee in introducing S. 1114, as well as your leadership, Senator Graham, in these hearings.

We have reviewed this legislation and have submitted extensive comments on S. 1114. We would welcome the opportunity to continue working with the committee to refine S. 1114.

During our review we found a number of provisions which we especially support. I'd like to focus my comments on these four areas that we feel are excellent. We would like to voice our support for them.

The first area is that we support increased efforts to ascertain the water quality by testing of all waters in the United States. We think this is one of the most important provisions of S. 1114. Testing will provide the road map necessary for protection of America's waters by identifying specific sites with genuine non-point source pollution problems. This will avoid needless Federal, State, and private expenditures of funds spent in an effort to solve nonexistent problems.

If I could, in a personal note by way of an illustration: In 1979, a State environmental regulatory agency filed legal proceedings against our ranch after a fish kill in a river that is close to us, alleging that we were pumping storm water discharges which, among other things, violated the following water quality standards: DO levels (dissolved oxygen levels), biological oxygen demand levels, turbidity, phosphorus levels, conductivity, chlorides; and suggested a number of other problems, including a statement that nutrient enrichment, because of the activity of cattle, occurred. All the allegations were supported by pages of expert witnesses, the majority of which were regulators from various agencies.

Subsequent to this, after 10 years of testing of our water discharges, versus an individual operation, and five years in combination with State agencies and other producers, it has been clearly documented that we had virtually no biological oxygen demand problems, no nitrogen problems, no phosphorus problems, no conductivity, no turbidity, no chlorides, no sulfate, or no pesticide violations. There were hundreds of tests.

While occasional problems of dissolved oxygen levels do occur in our discharge, the incidents and scopes of these violations are

much lower than suggested by the allegations. In addition, it was found that DO levels and discharges from the ranch were very frequently superior to those found in the naturally occurring receiving water. As a result of recognizing the impossibility of obtaining the State's standard, application for a site-specific alternative criteria seeking a lower DO level standard has been applied for by the regulatory agency.

Extensive long-range testing that accurately ascertain water quality problems will provide a scientific basis which will allow us to target real non-point source pollution problems, rather than to respond to every false allegation, faulty conclusion, and pseudo-scientific assumption.

Point two: We also support the provision of S. 1114 which targets water bodies with a demonstrated water quality impairment. Existing Federal budgetary constraints, and just plain good sense, require that limited that limited resources be directed toward those areas with real water quality impairment. Successful programs must include locally crafted and cost-effective solutions.

Point three: Additionally, we support voluntary site-specific plans for landowners which recognize current, on-going State and locally developed water quality programs across the Country. We also urge you to recognize the ability of landowners to craft viable solutions to demonstrated water quality problems. Positive incentives to improve water quality should be implemented.

Again, by way of illustration, when I became aware of the reality of the low dissolved oxygen levels in both our discharge and in the whole river system, I approached the agency to discuss the possibility of building retention ponds to provide treatment. I had been informed that such treatment if properly designed would raise dissolved oxygen levels by one part per million. As a result, we have completed two such treatment systems on our ranch at considerable financial expense to ourselves. Two more systems are in the process of being constructed, and several more are designed and are permitted.

In addition to the large expense required of us to engineer, permit, and construct these facilities, we have also dedicated considerable acreage for the treatment ponds. We will lose all productive use of this acreage. The largest of these ponds will be 505 acres. I want to emphasize that this was a voluntary action on our part.

The State obtained treated water, and will obtain much scientific information through our on-going monitoring program. We obtain the presumption of compliance with the State water quality standards, some dry season irrigation benefit, wetland mitigation credit because of the wetlands we created, and some public goodwill.

The project was voluntary. It helped to solve a problem, and it carries with it some non-cash incentives.

Cattle producers are willing and able to make management decisions which will protect water quality. NCA is involved currently in research to determine and ascertain the level of involvement in a number of States across the Country. When this study is completed, we will be pleased to provide you with copies of it.

Cattle producers are going to be a key component to water quality protection efforts. We are a major land use throughout the

Nation. We have the interest; we have the desire to improve water quality.

Senator, I will conclude my remarks with that, and once again expressing appreciation for the opportunity to be here to participate in this hearing.

Senator GRAHAM. Thank you very much, Mr. Genho.

I'd like to say I have been trying to encourage some of my colleagues to spend some time seeing some of the situations in Florida. I'd like to add your ranch as one of the places for visiting if we could do that.

Mr. GENHO. I'd be glad to do that.

Senator GRAHAM. Thank you.

Mr. Tucker?

STATEMENT OF L. SCOTT TUCKER, CHAIRMAN, STORMWATER COMMITTEE, NATIONAL ASSOCIATION OF FLOOD AND STORMWATER MANAGEMENT AGENCIES

Mr. TUCKER. Thank you, Mr. Chairman and members of the committee.

I'll admit up-front I am not a farmer. I am the executive director of the Urban Drainage and Flood Control District of the Denver, Colorado, metropolitan area. The District is a multi-county agency that covers six counties and 30 municipalities.

Today I am appearing on behalf of the National Association of Flood and Stormwater Management Agencies. We call it NASMA. We appreciate the opportunity to present our views to the committee on the stormwater management section of S. 1114. That is Section 402.

It is appropriate, I think, that urban stormwater is in fact a non-point source, and so it does fit with this discussion. Mr. Chairman, we believe that S. 1114 establishes an excellent framework for new amendments to a Clean Water Act dealing with municipal stormwater systems.

Pursuant to the Water Quality Act of 1987, some 200 of the larger cities and counties submitted their applications for NPDS permits for their stormwater systems. Despite considerable uncertainty and local resource constraints, the commitment of local resources to respond to this mandate has been significant.

By NASMA's estimate, these 200 cities and counties have spent over \$130 million just to prepare applications. For example, it costs over \$2 million to prepare simple applications for Denver, Aurora, and Lakewood, Colorado; which included the pooling of our efforts to reduce costs.

Preliminary results from a survey now being conducted by NASMA indicates that many of the 200 cities and counties are projecting to spend over 10 times the amount they spent on their applications during the first five year permit period. We are in the NPDS program now, I might add.

The programs that municipalities must develop to control pollutants in stormwater will be new programs. Unfortunately, to a large extent, we do not know how to predict their performance or effectiveness on receiving waters. In short, the Nation's larger cities and counties are not embarking on a large demonstration program.

We bring this to your attention to assure you that a considerable effort has been made, and will continue to be made to reduce pollutants in stormwater in spite of some doubts and concerns that have been expressed.

Mr. Chairman, in reviewing of S. 1114 within the context of NASMA's principal issues, we find it addresses most of our concerns. Our most critical issue is clarification of the use of water quality standards and objectives as applied to municipal stormwater. In reality there are fundamental differences between municipal stormwater and traditional waste water in industrial effluent point sources.

Consequently, water quality base limits, including numerical and pipe limits, should not be used in the municipal stormwater permit program to measure permit compliance. S. 1114 addresses this major concern by placing a 10-year moratorium on the use of numerical effluent limits for compliance purposes.

However, it is essential that this 10-year period be used to advance the urban stormwater science to enable the development of appropriate standards for wet weather conditions. This is imperative lest we find ourselves 10 years from now in the same position we are today.

We support the bill's provision to clarify the meaning of maximum extent practicable. A CZMA guidance document is a valid place to start, but it was developed for use in coastal areas. NASMA recommends that provisions be included to review and revise the CZMA guidance as necessary to achieve an acceptable degree of Nation-wide applicability.

S. 1114 recognizes the fact that municipal stormwater systems convey, not create, pollutants that are generated by many widely dispersed sources. As such, municipal systems are more like non-point than traditional point sources. The bill's provision to consider the reduction in use of pollutants that are found to be significant contributors to water quality impairment is a sound and wise response to this problem.

If there are any questions, I would be happy to respond. Our full statement has been submitted.

Senator GRAHAM. Thank you very much, Mr. Tucker.

As with the first panel, the full statements of each panelist will be included in the record.

Ms. Cameron, do you have any additional opening statements for the Panel II?

Ms. CAMERON. In a way, I guess I am a stand-in for Mr. Warrick, who is chairman of the Sierra Club Agriculture Committee, and a Nebraska farmer. If I may, I would like to read a brief selection from Mr. Warrick's testimony, because it further underscores our own view on the issue.

In general, Mr. Warrick supports title III of S. 1114 as an effective first step toward meeting water quality goals for non-point programming. Mr. Warrick goes on to state that,

However, my experience in sharing a county soil and water conservation board and a natural resources district tells me that the success of any watershed polluted run-off program would be determined by how effectively site-level plans are implemented throughout the watershed. My experience as a farmer suggests that land owner cooperation in implementing site-level plans can only be obtained where there is the perception that mandated management measures were determined as

the result of a fair process, uniformly applied to all land owners in the watershed, and based on problems identified by application of specific objective criteria.

I believe he is talking there primarily about objective water quality criteria in the stream that gives farmers a target to shoot for when they are designing their flexible plans.

I therefore urge that any non-point pollution program ultimately enacted include the following components: A watershed based comprehensive approach that protects surface water, ground water, wetlands, lakes, and all land uses; a process to determine what pollution sources in an impaired watershed are most critical to water quality improvement; mandatory site-level planned development and management level implementation for targeted pollution sources; management measures based on specific water quality objectives and criteria to protect human, fish, and wildlife health; comprehensive training for all government officials involved in site-level planning or in providing technical assistance in the implementation of management measures; and a unified approach that builds on and incorporates existing conservation and water quality plans from the Food Security Act and other laws.

Thank you.

Senator GRAHAM. We have had since 1972 a Clean Water Act, and for the last five, almost six years a specific Federal commitment to non-point source pollution control. I would be interested in your diagnosis of what has happened in the past, in terms of the Federal efforts at non-point source pollution control. What is your diagnosis of the current Federal efforts, and from that, what do you think should be our priorities, particularly as it relates to agriculture for this re-authorization?

Mr. Genho?

Mr. GENHO. Yes. I mentioned the 1972 enactment of the Clean Water Act. I grew up on the St. Johns River. I recall well the industrial waste and raw sewerage in that river during my childhood and early adulthood, and recognize the real progress that has been made in the point source problems, just from sitting there and watching that river over these years.

I think non-point source has had less of an emphasis, and less of something that we have all focused on, and as was mentioned earlier, years ago we were all told that the solution to pollution was dilution. In agriculture, it was to spread everything out, and then there was no need in worrying about it. But that consciousness has changed rapidly, both on the State and Federal level and in the regulatory agencies, and those managers of the farms of this Nation.

In 1987, as I understand it, there was created the amendments which began the section 319 program and limited funding. The first money from that was allocated, I believe, in 1989. So in some cases it was a year and a half later before it actually began to hit the ground, which would put it in the mid-1990's. So we really have started this voluntary program to move forward. I think the consciousness is being raised out in the country.

I don't think at this time we can say there has been a horrendous amount of change, because there hasn't been the time. Biological things take time to change. We are really looking at two years or so of programs that have been funded. Obviously, the funding has been grossly inadequate. In order to have the kinds of programs we need we are going to need more funds.

We also, right now, have a lot of information that may or may not be valid, and that we are trying to make conclusions from. The testing program, I know, is extremely critical. We must have a

solid baseline of good information so we can target these real problems, then spend private, Federal and State money to clean them up. We know there are non-point source pollution problems; and we know agriculture contributes to it. Agriculture wants to be part of the solution.

We need to continue in the general area that we have been going in, refined by the additional funding.

Senator GRAHAM. Do you have a comment, Ms. Olson?

Ms. OLSON. Yes. I would to add a couple of comments that I agree with Mr. Genho in general that non-point source pollution, especially for agriculture, has been a secondary thought in the first 20 years of Clean Water, primarily because the focus has been on point sources.

However, from my own personal experience, I would not say that non-point source pollution from agriculture has gone totally overlooked in the area of the Country that I come from. We have designed at our county level best management practices for water quality. Those were designed by our local county extension agent, our local Soil Conservation Service and local farmers, and in the mid-1970's were adopted by our State Department of Ecology, EPA's counterpart within our State. Since that time, every farmer in our State has adopted one or more of those practices. I think the average is about seven.

Senator GRAHAM. Any further comments on the question of the diagnosis of the status quo?

Ms. Cameron?

Ms. CAMERON. Mr. Graham, this morning we have heard from two of the witnesses with respect to the magnitude of the forestry industry impact on water quality, and also the range land and grazing impact on water quality. I think that we would like to have the opportunity to submit further information on those two issues in particular.

I believe that the whole story has not yet been told here this morning. I don't have particular data in front of me, but we believe that there needs to be much more serious monitoring on the part of the States for those two land use categories in particular.

There is a good start in S. 1114 addressing the monitoring for those two land use categories in the general sense that there is more direction for monitoring given to the States in S. 1114, but we would like to see, for example, the State of Maine implementing a systematic approach to monitoring for the effects of logging, since the logging industry is very important to Maine.

Likewise, there are many parameters that reflect the effect of grazing on water quality that not every State right now uses, or is not required to use. For example, Oregon uses temperature as an indicator of the effect of overgrazing on the streams of Oregon. That is a parameter that could be used more widespread in other States.

Senator GRAHAM. Mr. Tucker, then Senator Chafee.

Mr. TUCKER. I would like to take this opportunity to point out again the difference between the non-point approach of 319, and then the approach to the non-point problem of urban stormwater. We have been working under Section 402. Part of our concern has been trying to deal with a really non-point problem within a point

source program. I think the S. 1114 attempts to deal with this and provide mechanisms to deal with urban stormwater as more of a non-point problem, as it is. But I'd like to make that linkage.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. Thank you, Mr. Chairman.

This has been very interesting. I want to thank you for getting these witnesses, and thank all the witnesses, many of whom have come a good distance. You have come all the way from the State of Washington, Ms. Olson.

I think your comments were good; everybody's comments were good. Ms. Olson said education is better than a police force. It seems to me what we should strive to do here is to try to show that this is a worthwhile effort so that the people participating feel that there is something in it. That comes through education.

I must say, Mr. Tucker, I was appalled at the amounts that are being spent by larger cities to obtain the NPDS permits. I think you indicated that in Denver alone you have spent \$23 million to obtain your permits.

Mr. TUCKER. \$2 million for the permit applications.

Senator CHAFEE. To prepare for the permit applications? That must be a cottage industry out there, isn't it, preparing these permits?

Mr. TUCKER. It is quite a cottage industry all over the United States for those 200 and some communities. To give you an example of the cost, it was the monitoring cost alone. We were required to obtain wet weather stormwater data from eight sites. It ended up costing \$40,000 per site to obtain that data. We worked with the U.S. Geological Survey to obtain that information. We are now having to go back to even collect some additional data because some of the data that was initially collected wasn't adequate.

Senator CHAFEE. Thank you.

Dr. Weeks, you work for Agway, do you?

Dr. WEEKS. Yes, I work for Agway in research and development.

Senator CHAFEE. It seems me the information that you have obtained dealing with our favorite subject, manure, is something that hopefully would be shared in a widespread fashion throughout our country. In other words, what you are doing over there is very beneficial. How do you get the results of your activities out?

Dr. WEEKS. We have a number of publications, Senator, that go to our farmer members, plus we are involved in this cooperative research farm organization which takes information to 11 other cooperatives around the U.S., Canada, and France. So we do that.

We go to some technical meetings and present some reports on how the system is operating. We think in the next 90 days we have a very interesting opportunity because we are constructing the system at USDA Beltsville. We would encourage all of you to go see that when the system completed done and in operation.

Senator CHAFEE. Where is that, right out here?

Dr. WEEKS. In Beltsville.

Senator BAUCUS. Is that inside or outside the Beltway?

[Laughter.]

Dr. WEEKS. I don't know.

Senator CHAFEE. Just outside the Beltway, not very far.

[Laughter.]

Senator BAUCUS. Then, we'll go visit it.

[Laughter.]

Senator CHAFEE. Mr. De Golyer, you have quite an operation up there. You have 650 milkers?

Mr. DE GOLYER. Yes.

Senator CHAFEE. And you are going to 850?

Mr. DE GOLYER. Yes, within the next couple of years.

Senator CHAFEE. Just out of curiosity, I come from a small State, so this is big action for us, to see 850 milkers. How many people do you have helping you?

Mr. DE GOLYER. We have about 12 employees. By farming standards, it is a good sized farm, but compared to other businesses it is still a small business.

Senator CHAFEE. So it is a good sized farm up our way, I'll tell you.

Thank you all. Thank you, Mr. Chairman. This has been very helpful.

Senator GRAHAM. Senator Baucus?

Senator BAUCUS. Thank you.

I want to thank everybody, too, for not only coming a great distance, but also working hard to help find a combination here, a balanced approach to non-point source pollution control. It means a lot to all of us.

I'd like to change gears a little bit, though. Addressing the problem I think we have in this country, where if people are not losing confidence and faith in Government, they certainly are beginning to question it a bit more, particularly the membership organizations.

Each of you have spent a lot of time thinking about these issues. I believe you understand of this democratic process of ours, of compromise with small c, and in the best sense of the word, to try to reach a result. We all know, and certainly all of us who represent States, you know as people who represent your constituents, that often the people we represent have very strongly held views, and they are not altogether complimentary about the process.

So I am just curious about how you can help us, how we can help each other in addressing that. Because whether it is stockmen, dairymen, or cattle growers, or beef growers, or who ever, do you think your membership is going to like or not what we are doing here?

If they don't like it, assuming you think that basically, what can you do about addressing their outrage, very strongly held views that this is a bunch of baloney? What do we do about that? I am just curious about your comments here.

We are all sitting in this room. We are talking about this, and we have read the bill, and we know about it. But the people we represent haven't.

Ms. OLSON. I'd like to respond.

Senator GRAHAM. Ms. Olson?

Ms. OLSON. I think that we in agriculture, and I'll speak first broadly, and then specifically for my group.

We in agriculture have invested in clean water. That has been reiterated time and time again by numerous panelists today. I think that our group, the members that I represent, the farmers

back home on the farm, have a very difficult time with paper work, additional paperwork.

We are all small business people. We don't have the benefits of an accounting department and someone to keep track of the new changes in laws, etc. That falls upon generally a husband and a wife. In my case, it falls upon me. I have a family to take of. I have other responsibilities as well.

Farmers in general rebel against paperwork, not against the goal, but against spending a lot of additional time to document and prove what they have been doing. They feel that they are not given credit for the substantial hands-on actual accomplishments that they have made.

Senator BAUCUS. I agree with that. So what do we do about that?

Ms. OLSON. I think one of the things that we can do is the targeted site-specific idea that you have come up with in your bill. I think that if we could spend more time doing hands-on stuff, which site-specific gets at, involve those people in their watershed locally, I think that is a very positive way to bring out the best, and to show them that the intent is to do something, rather fill out papers.

Senator BAUCUS. I agree with that.

Your people have even more strongly held views.

Mr. GENHO. Yes, that is generally true of cattlemen. They do have strong views.

In the whole agricultural community there is a level of apprehension about what is happening to them, rapid changes and turbulence that is being caused in their industry by the regulatory process, a rapid increase in the regulatory process. It is very threatening to the agricultural community, to agriculture individuals. Part of that is the cost; part of that is the uncertainty about the future; part of that is the idea that we are responding to the perception instead of to the facts, to science.

Our operation, for the last several years, has spent about six cents per pound, for each pound of calf produced, either in mandatory complying, or voluntary compliance, or legal defense. We are a fairly large ranch, but as I have visited other ranchers who are looking at this—and six cents a pound is a lot per rancher—so, they feel threatened by this. I don't know of any rancher, and I know a lot of them across this Nation, who doesn't want to, genuinely want to, contribute to a solution. There is a genuine fear of the regulatory process.

There is a genuine fear that we are having to respond to perception instead of science, and that in most cases if we can be at the table participating, and if we are educated to the real necessity of the solution, I think that you will see that the strong-willed ranchers will be just as strong-willed on solutions as they are in their opinions.

Senator BAUCUS. I believe they will. You can see that happening.

Senator GRAHAM. Dr. Weeks?

Dr. WEEKS. I have just a couple of comments.

I think the first one would be that communications as usual is the key. We should turn around an old joke and say, "Hi. We are from the country and we are here in Washington to help you."

[Laughter.]

Dr. WEEKS. But communications is clearly the key. I think the concern of our farmer members is what are you folks doing down here which is going to increase our costs of operating? Farming is not a high profit margin business. When we compare the dollars that have been spent in human waste handling—and I make that analogy between human and animal waste handling; I think there is a strong analogy there—as we have more intensive agricultural operations, I really believe we need some dollar support. That is the key question that I think our farmer members have. What are you doing down there that is going to increase our costs of operating, and how are we going to be able to continually operate and make a profit?

Senator BAUCUS. Ms. Cameron, I'd like your perspective.

Ms. CAMERON. Well, certainly I also represent a constituency, particularly the 170,000 members and supporters of the Natural Resource Defense Council around the country, and then more loosely, I work with the members of the Clean Water Network, which are not only environmental groups, but also commercial fishing organizations, trade unions, and other groups. We collectively are very concerned that we need to fill the gap that we see in the Clean Water Act.

Senator BAUCUS. But are they going to be outraged about what we are doing here?

Ms. CAMERON. Pardon, I'm sorry.

Senator BAUCUS. Is your membership going to be outraged with, happy with, content with what we are doing? What is their view, and how do we get them to the degree that they are isolated and separate from this, to become part of the process working toward a common solution?

Ms. CAMERON. In terms of the overall framework of Title III, and the non-point source pollution provision in the bill, I feel that the framework is basically sound, particularly the emphasis on a watershed basis. We would like to see that watershed focus be strengthened even more, so that for example it is not entirely up to State discretion as to the scope of targeting.

For example, we support the approach in the Oberstar bill, H.R. 2543, that requires that all watersheds of waters that are already on a sick list, if you will, impaired or threatened list, that all of those watersheds be targeted by each State. Again, those are the States on listing, so it is not a Federal imposition of a target list, but it would be a Federal requirement that would say for you, Florida, all the waters that you have identified as being impaired or threatened we are now going to give you a required duty to restore and protect those waters.

Senator BAUCUS. I agree with you. I think Ms. Olson made a very good point.

We found on this Committee, backing up, this year I decided not rush pell-mell to reauthorize the environmental statutes, but rather hold a series of taking stock hearings to find out what works and doesn't work before we begin to reauthorize.

One development we discovered is the importance of regulators, if you will, working with businesses they regulate. That is the EPA for example, or a State regulatory agency for example, ought to go on site, visiting a firm, and not slapping violations on the firm, but

rather say here is a problem. Then the firm's environmental people could work with, for example, with the agency people, and they could find a solution.

Part of the solution could be, again, no fines, maybe a delay; but still a date by which the firm does meet the air quality, or the water quality standards, or what-not. It is much more cooperative. It is on-site in the sense that people are working together and they are finding the solution. They feel part of the process.

I think that we should try to, and not only with the Clean Water Act and non-point, but generally, pursue that approach, because I think it tends to build people's confidence so that they can see that this process really is working, it really is for everyone's mutual benefit, rather than having someone on high insensitively dictating a result that is often not really close to the solution, because the dictator hasn't considered other points that need to be considered.

Mr. DE GOLYER. I would like to comment, Senator.

I was intimidated coming down here. I have been very pleasantly surprised with the tone of this hearing, and the knowledge that you people have with the problems in agriculture. So it has been very pleasant for me.

My suggestion in helping agriculture to get behind this program is to work with the people who we are used to working with. That would be our local Soil Conservation Service people. We are used to having them help us solve problems.

Senator BAUCUS. They are highly regarded around the Country, too.

Mr. DE GOLYER. Yes. We are also used to working with the people from the Extension Service. We do feel a real strong need as my grandfather used to say that agriculture changed more in his lifetime than it changed from the time of the birth of Christ. I think it has changed more since my grandfather died.

We do need to have this research done by our Land Grant universities to give us the technology and the ways to solve these problems.

One final thing: You are talking about the perception of your bill. We have a real problem in our home community with the perception of our non-farm neighbors of how agriculture is run. We have had a citizen suit with our next door neighbor that went for \$4.1 million that they were asking for. My neighbor could have very easily bought his way out of this. I think Mr. McGuire kind of referred to this, as my neighbor has very high principles and knew what this meant to agriculture if the suit was successful.

The four families that brought this ended up, instead of \$4.1 million, they ended up with \$4,001. It might be said that while this suit is still on-going under the Clean Water Act, but you might say my neighbor won this battle. But it has cost him \$400,000 in legal fees. Part of the problem is that the Clean Water Act does not have the real good definitions for what is and what isn't compliance.

Senator BAUCUS. There was a comment this morning about citizens' suits. I could clarify that. There are no provisions in this bill which would allow someone to sue a farmer for his failure to comply with the plan. There is nothing in this that will so provide.

I thank you very much, Mr. Chairman.

Senator GRAHAM. Mr. Faircloth?

Senator FAIRCLOTH. Thank you, Senator Graham.

You all are involved with agriculture, and very much so am I. In fact, as I said earlier, some of the Senators were bringing somewhat of an analogy to the chicken and the hog to the breakfast. The chicken brings a days work, but the hog brings his life to it. That is pretty much what I am bringing here.

I think overall what we are saying here, as I tried to listen and to observe, there isn't any way to hire enough regulators, inspectors, supervisors, checkers to do the job. If it is done—and it will be done—it's going to have to be done because the people in agriculture, the non-point sources, are going to have to want to do it.

As Mr. Genho said, the people in the cattle industry do not want pollution. I am in this business, too. We have 16,000 acres of cattle land in North Carolina. I think the farm communities are doing a lot more than many people from the environmental section think.

We test hay for nitrates. We have many, many wells in the hog operations, too. We check it constantly, and monitor it. It can be done. It has to be a voluntary effort. We do not need more rules, more regulations, as Ms. Olson said, more paperwork, more reports, more filing, and more checkers.

We have had the Soil Conservation Service, which has been enacted in this country since 1933, for the sole purpose of what we are talking about, soil conservation. If you pollute it, you aren't conserving it. Soil and water conservation, that is what it was set up for in 1933 or 1934. Soil and water conservation, that was its purpose.

It is still in effect today. As far as I know, every county in the United States must have one. There must an infinitesimal number of counties that do not. What county are you from, Mr. Genho.

Mr. GENHO. Osceola County.

Senator FAIRCLOTH. What?

Mr. GENHO. Osceola County.

Senator FAIRCLOTH. Oh, you are from Osceola. But you have Soil and Water, of course. And this is the answer, and the reasonable answer to it. The agriculture community in this Nation is used to working with these people. We have worked with them—I was in produce farming at one time, and we worked from Collier County all the way up to Suffolk County, New York at Riverhead. We worked with the Soil Conservation people and the local agricultural people. We handled problems.

I do not think we need to come forth with an entire new set of rules, regulation, and checking. I think we have in the SCS the management group there to handle the problem. If they need further instructions, if we need to change something, we can change it. But we don't need to come with a whole new organization to implement the program.

I say we spend our lives with it everyday. We test wells by the dozens, and monitor what we are doing. Farmers are beginning to come to that. But I don't see new regulation and new rules.

What would you have to say to that? You work in the cattle industry.

Mr. GENHO. I agree. Again, my feeling is that agriculture in total, when we know the real problem, when we see scientific solutions, we will move forward to solve them. Working with organiza-

tions such as the SCS and the Extension Service, agriculture will solve those problems that are voluntarily organized on a local basis. You will find compliance much greater than you would realize.

Senator FAIRCLOTH. Also, you can put a monetary penalty to compliance, because as I said earlier, SCS and ASC are in the same building in the majority of the counties. I am sure they work closely with the cattlemen.

Mr. GENHO. There can be positive incentives, like I said earlier, they don't have to be cash, but they can be positive incentives which will encourage compliance also.

Senator FAIRCLOTH. Fifty cents a pound on cows is kind of high, but it is not as bad at 87 cents as it was at 52, is it?

Mr. GENHO. That is right. The market has been good to us this year.

Ms. CAMERON. Mr. Chairman, if I could respond to two key underlying themes that have been brought out today?

One of them is the idea of voluntary versus mandatory approaches. The other one being the paperwork burden on farmers.

The testimony of Mr. Warrick, as well as my own, has touched on those issues. On the paperwork burden issue, Mr. Warrick's testimony I think is very instructive. We tend to agree with what he says here.

He says,

If farms are targeted in impaired watersheds, as they are in S. 1114, a polluted run-off program should require each farm to develop an integrated whole-farm plan, which incorporates sustainable practices through a systems approach. Farm plans should emphasize cost-effective practices.

The plans should incorporate and give the farmer credit for all other conservation programs, including conservation compliance, the integrated farm management program option, the water quality incentive program, the wetlands reserve program, and the coastal zone management program, so that each farmer is required to do only one plan for the entire farming operation.

The planning process should provide flexibility so that the farmer can design options which are practicable and reasonable for that particular farming operation. Ultimately, however, the implementation of the plans components should be mandatory. Reasonable time lines should be provided to develop and implement plans. This approach is consistent with the recommendations for farm level planning contained in the Water Quality 2000 report.

So the idea in that excerpt is that we need to try to have one-plan-does-it-all, because recognize that farmers have very little time. They don't want to be in the office doing paperwork, if they can help it. We understand that. But it also underscores the support for a mandatory approach.

I have a brief list of reasons why we do not think that the voluntary approach, at least in impaired and threatened watersheds, is sufficient. We find that it tends to be costly. It traditionally relies on very cost-sharing ratios to get farmers to buy into the voluntary system. There often are ironically inadequate participation rates in many of the watersheds despite the pumping in of sometimes millions of dollars.

Decisions about who needs to get involved are made in a strategic manner, but they are often arbitrary, or just simply haphazard in terms of individuals stepping forth saying I want to do more, which is good, but it is not a systematic way of getting full participation in a watershed.

Also, there is fairness, as Mr. Warrick's testimony generally brings out. The farmer wants to know that his or her investments in water quality are being matched and are being fully successful because all of their neighbors in the watershed are pulling in the same direction. So there is a fairness element.

Basically, we need to have accountability for results. One of the reasons that we support requirements for whole watershed planning, whole watershed restoration, and also individual landowner responsibility in those watersheds is that by having requirements for environmental goals to be met, and for landowners to undertake either flexible site level plans or the mandatory management measures, that there is a greater infrastructure that is on the part of the Soil Conservation Districts, the State monitoring infrastructure, that all of those components will be more strategically targeted and established when everyone has a clear set of defined goals. Even if some of the goals don't kick in until a decade down the road, everyone knows what direction they are pulling in, and what needs to happen to reach those goals.

We find that all of those elements are there when we set up a system with some required action to be taken. They do not tend to be there when we have a purely voluntary program. In the recent law passed by Pennsylvania with mandatory nutrient management planning underscores that.

I'll just wrap up by quoting Representative Jeffrey Coy, who was the Pennsylvania legislator who led the effort for the recent mandatory manure management law there. Mr. Coy said he pushed his legislation because, "it was obvious to me that the voluntary approach was not working. We needed to turn the corner toward a mandatory program."

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Thank you, Mr. Chairman.

I'll ask this to anyone. If a voluntary program won't work, considering the size and the expanse of the agricultural community, and the thousands of problems there, if a voluntary approach to it won't work, how would we get enough people to supervise every farm and field in the United States? What would that take?

Mr. GENHO. Again, I am convinced that if there is adequate information, scientific solutions, good educational procedure, positive incentives, and the participation of agriculture it will work. So I guess I hadn't considered what would happen if it didn't.

Senator FAIRCLOTH. I haven't either. I just was raising the question.

Senator GRAHAM. Ladies and gentlemen, I want to echo the comments that have made earlier about how much we appreciate the effort that you have extended, particularly when have people who come almost every corner of the Country to educate us today. This has been a very exceptional hearing. I want to thank both who participated in the first panel, and you folks on the second. Your words have been well heard and recorded. I hope you will see the results of your insights as we move to the next stage of shaping this legislation.

I want to particularly thank my fellow Floridian. Everybody has talked about their agricultural background. I might say that my father came to Florida about 70 years ago to be a sugarcane

farmer, and we stayed to be dairy farmers. Maybe we could talk about milking some cows.

Thank you very much.

[Whereupon, at 1:12 p.m., the subcommittee adjourned to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

TESTIMONY OF RICHARD T. MCGUIRE, COMMISSIONER OF AGRICULTURE
AND MARKETS FOR THE STATE OF NEW YORK

Good morning Mr. Chairman, members of the Subcommittee. I am Richard T. McGuire the Commissioner of Agriculture and Markets for the State of New York, and pleased to be here this morning with my colleague, the New York City Commissioner of Environmental Protection, Albert Appleton.

Our principal purpose is to describe to the Subcommittee the unique approach that has been adopted between the farm community and New York City to address New York City's drinking water protection needs in its watershed, and the program's importance for the development of national nonpoint source (NPS) pollution control policy. I believe there are some important principles embodied in the New York City watershed agricultural arrangement that the Subcommittee may want to consider in reauthorizing the Clean Water Act (CWA).

I also appear before you today on behalf of the National Association of State Departments of Agriculture (NASDA). NASDA is nonprofit association of public officials representing the Commissioners, Secretaries and Directors of Agriculture in the fifty states and the territories of American Samoa, Guam, Puerto Rico, and the Virgin Islands. As the chief state agriculture officials, NASDA's members are keenly aware of the importance of balancing agricultural production and natural resource conservation on their state's and the nation's economy.

NASDA's broader position on the CWA does not necessarily reflect the views of New York State on that law or its administration. I am not here to testify for New York State on the CWA.

NEW YORK CITY WATERSHED PROGRAM

Today I will discuss the efforts which the farm community, New York City, local government, and New York State have taken to preserve water quality in the New York City Watershed area. This successful effort is based upon the prospective voluntary adoption of best management practices to control nonpoint source pollution by the more than 550 dairy farmers in the New York City Watershed area.

Farming has been practiced in the New York City Watershed area of Delaware, Schoharie, Sullivan, and Greene counties since long before New York City came to rely on the watershed for most of its water supply. The City has preserved its water quality in the midst of agricultural production for decades. Efforts to improve farming practices, especially through the adoption of soil and water conservation techniques, with the leadership of the Soil Conservation Service delivered through the local Soil and Water Conservation Districts and the Agricultural Stabilization and Conservation Service, have allowed farmers to maintain the economic viability of their farms by keeping their topsoil on the land. This voluntary, locally based effort by farmers has a proven record of success, not just in New York State but in most parts of the United States.

Agriculture in the Watershed has been changing. The pressures of the economics of dairy farming have led to larger herds of dairy cows, intensification of land use for crop production, and greater concentrations of animal waste. New measures, based upon the proven path of voluntary and locally based approaches, need to be implemented to cope with the increased requirements for drinking water protection and raw water quality maintenance in the New York City Watershed area. The Whole Farm Planning Approach Program is being implemented to meet the needs of farmers in the watershed, as well as the metropolitan-area urban public, which is dependent upon this surface water supply. This approach was the result of a lot of hard work by all who were concerned about long-term protection of the City's water quality, while maintaining the agricultural economy of the area.

In mid-1990, New York City circulated draft mandatory restrictive agricultural land use regulations in order to meet their goal of drinking water source protection without resorting to a costly filtration system. Uniform and inflexible regulations were seen as unworkable and undesirable by the local agricultural community due to their negative impact upon the farm economy of the region.

In December 1990, the New York City Department of Environmental Protection and the New York State Department of Agriculture and Markets cooperated in convening an Ad Hoc Task Force on Agriculture and New York City Watershed Regulations. This group was composed of local farmers, local agricultural, environmental and government organizations, state representatives, and technical advisors. The Task Force was comprised of a Policy Group and a Technical Support Group. Members of the Policy Group represented agencies that are directly involved in issuing and administering the proposed watershed regulations, groups that are affected by the regulations, and organizations that may contribute to facilitating them.

I have attached a copy of the Task Force final report with the Committee, so you may have the opportunity to study its membership and the program scheme as it emerged from these negotiations. The goal of the group was to find an alternative to a mandatory set of rules and regulations which would still achieve the desired level of water quality protection. Over the course of a year the Whole Farm Planning/Best Management Practices approach for the New York City Watershed concept was developed and evolved.

Farming in the New York City water supply watersheds presents a complicated environmental management problem. Farming methods and practices are a potential source of nonpoint source pollution and present a risk of pathogen introduction, siltation, toxics, and nutrients introduction to the City's reservoirs. Farm practice pollution control is critical for meeting the City's anti-degradation objectives, as well as the avoidance criteria of the Federal Source Water Treatment Rule and the State Filtration Rule. On the other hand, farming is a preferred land use as compared with more intensive uses like second homes, which pose even greater threats to the City's drinking water quality, with significant long-term environmental benefits, and the City wants to take all appropriate steps to keep farming economically viable and in control of the land.

A locally developed and administered program of best management practices, tailored farm by farm, with the voluntary cooperation of the farm operator, would contribute far more to achieving the avoidance criteria, as well as enhancing the viability of the farm enterprise and the agricultural economy. Discussions in the Ad Hoc Task Force convinced members of the Task Force representing the City and the farm community that the regulatory proposal took a purely water quality perspective and set absolute technological standards for all farm practices, to be applied uniformly in all farm situations (uniform setbacks from streams, berming pastures, control of all pesticide use, etc.).

The City, after consulting with appropriate regulatory bodies and after full review of federal and state regulations, was satisfied that such a program would meet the avoidance criteria for effective watershed regulation, and represents the best strategy for dealing with concerns of both the City and the farm community.

Whole Farm Planning/Best Management Practice Program Option

Guiding Principles—In place of the agricultural regulations, farmers have the option of participating in a voluntary Whole Farm Planning/Best Management Practice Program. These are the guiding principles for the program:

- The objective of the program is to protect the sources of the New York City water supply, while keeping farms in operation. Agriculture should be continued and promoted as a preferred land use in the New York City watersheds. Except for a general prohibition to safeguard against individual farm operators who exhibit a willful and irresponsible intent to pollute in a manner that threatens to significantly increase pollution levels and degrades the source waters of the City's water supply, the program will be entirely voluntary.
- The preferred approach to source protection for farms is the use of Best Management Practices (BMPs) developed to meet water pollution control policies under the 1989 NYS Nonpoint Source Water Pollution Control Act and Section 319 of the Federal Clean Water Act amendments of 1987.
- The mechanism of choice for selecting agricultural BMPs is preparation of a Whole Farm Plan for each farm. A collateral objective for each Whole Farm Plan is to sustain and improve the economic viability of the farm. Whole Farm Plans will be prepared by a local county project team, including personnel from the County Soil and Water Conservation District, Cornell Cooperative Extension, and the Soil Conservation Service.

Whole Farm Plans will involve these components: soil erosion control, animal waste management, plant nutrient management, domestic animal pathogen management, and chemical and pesticide management. Whole Farm Plans will address these agricultural contaminants: nutrients, pathogens, sediments, toxi-

cants, and organic matter. The level of control required for each Whole Farm Plan should depend on the presence of hydrologically sensitive areas.

- Incentives, including cost-sharing, will be made available by the City to participating farmers, supplemented by a reasonable mix of state, federal and local funding sources, if available.
- Continuing education, professional training, and local involvement are essential components of the Whole Farm Program.

The Whole Farm approach to drinking water quality source protection integrates selected management practices intended to provide short- and long-term protection of water quality, with a farm business plan designed to sustain a profitable agricultural enterprise, given the mix of physical, capital, and management resources available to and consistent with the objectives of the farm operator. Development of a farm plan to meet these twin goals requires a comprehensive assessment of all elements of the farm property, as well as the business strategies and practices that affect both.

The evaluation of current farming conditions and practices and the development of options for both the farm business enterprise and water quality protection will be a collaborative venture between the farm operator and the Cooperative Extension/Soil and Water District County Project Team, supported by the Soil Conservation Service, Cornell University faculty and staff, New York State Soil and Water Conservation Committee, and the New York City Department of Environmental Protection.

The systematic use of the Whole Farm Planning approach to accomplish pollution prevention in a large watershed system has not been previously attempted anywhere. The Whole Farm Plan is a new concept which requires the integration, and some modification, of the diverse views and convictions of the agencies involved. The purpose of Phase I of the Agricultural Watershed Protection Program is to perfect, test, and demonstrate the Whole Farm Planning approach on selected farms, and to strengthen the New York City/local partnership in the process.

Locally-Administered Whole Farm Planning/Best Management Practice Program—The City has established a locally administered program for the planning and implementation of Whole Farm Plans, in conjunction with watershed farm operators, with assistance from the New York State Soil and Water Conservation Committee, the Soil and Water Conservation Districts, Cornell Cooperative Extension, the New York State Water Resources Institute, the New York State Department of Environmental Conservation, the New York State Department of Agriculture and Markets, the Soil Conservation Service, and other appropriate institutions.

This program is responsible for:

- Reviewing existing BMPs for their applicability to watershed pollution control objectives.
- Developing and implementing a series of immediate demonstration programs with local farm operators to test the feasibility and define the methodologies of the Whole Farm Planning approach to source protection.
- Working with farmers to prepare Whole Farm Plans, and implementing those plans.
- Establishing a voluntary Whole Farm Planning/Best Management Practices Program for the entire farm community.

Voluntary Participation—Until December 31, 1996, the City is offering farm operators the opportunity to voluntarily participate in the Whole Farm Planning/Best Management Practice Program. A goal of 85 percent participation in this program by farmers throughout the watershed has been established.

Farm operators who choose to participate will be given until December 31, 1996, to work with their County Project Team to develop a Whole Farm Plan and agree to install practices according to the schedule outlined in the plan. Farm operators voluntarily participating in the Whole Farm Planning/Best Management Practices Program will be held harmless and not required to amend the farm practices agreed to in their whole Farm Plan even if, after the evaluation of the entire program in 1997, the City, in consultation with the Watershed Agricultural Council, determines there are changes needed in the watershed regulations or agricultural program. Participating farm operators would still remain responsible for violations of existing federal, state, and local standards pertaining to water quality.

Cost-sharing—Participating farm operators will receive City cost-sharing for both the planning and implementation of the Whole Farm Planning/Best Management Practices Program, to the full extent of any cost incurred, adjusted for whatever funding is otherwise made available under existing or future federal and state agricultural water quality and other cost-sharing programs. The City will pay the cost

to the farmer of participating in development of the Whole Farm Plan. Costs incurred shall include BMP operation and maintenance costs identified in the Whole Farm Plan, to the extent they represent new and additional farm operating costs considered necessary to the pollution prevention objectives of the plan.

Review of Progress in 1997—During 1997, the City, with the assistance of the Watershed Agricultural Council and other appropriate public and private parties, will engage in a review of the results of the voluntary agricultural best management program. This review will assess the extent to which the practices and facilities called for by the Whole Farm Plans have been, or are being, adopted on schedule and are being properly maintained. Also needed is an evaluation of whether the results are consistent with the requirements of the avoidance criteria and the City's anti-degradation water quality objectives. If the review does not justify a continuation of the program in its adopted form, the City will submit to the New York State Department of Health such revisions to the watershed regulations as it deems necessary to continue to meet its obligations and responsibilities.

The City will work with the Watershed Agricultural Council on developing parameters and criteria for evaluating the agricultural program in 1997, including a variety of program and regulatory options to consider in the event that changes may be needed.

Implementation of Principles and Standards—Agricultural BMPs, as developed by New York State in support of the nonpoint source water pollution control policies of State Law and Section 319 of the Federal CWA Amendments of 1987, are the preferred methodologies and techniques for implementing these principles and standards on farms in the New York City watershed system. The Whole Farm Planning approach will be employed to tailor the applicability of relevant BMPs to conditions peculiar to each farm, while providing for a farm management plan that sustains or enhances the efficiency, productivity, and economic profitability of the farm enterprise.

Scientific uncertainty exists when relating agricultural practices to their effects on raw water compliance with drinking water standards. Drinking water standards for raw water at its source covering some of the agricultural contaminants of concern are not defined. Therefore, as a general rule, Whole Farm Plans should call for the design, installation, management, and maintenance of any combination of BMPs necessary to limit the release of nutrients, organic matter, domestic animal-borne pathogens, toxic chemicals, and soil to any surface or ground water body, consistent with applicable state and federal laws and regulations, as well as with the water quality goals established for the watershed. In those cases where it can be shown that an activity on a specific farm leads to an actual violation of a legally adopted water quality standard, the farm shall be required to alter the activity to the extent necessary to meet the water quality standards.

While it may be possible to achieve zero discharge of some contaminants during some periods (i.e., avoiding winter land application of manure or relying wholly on biocontrols or cultural practices to control some pests) universal attainment of zero discharge for all agricultural contaminants at their source is not practically achievable.

BMP Implementation—The implementation of Whole Farm Plans may be viewed as a two-level process. First, the "installation" of physical structures prescribed by the farm plan will need to be arranged. These structures may include grass waterways, manure storage facilities, barnyard improvements, diversions, etc. Engineering expertise is needed from the design through final certification of construction. Engineering technical assistance needed includes: gathering of site-specific data on soil type, drainage characteristics, and topography; preparing construction drawings, specifications, and contract documents; reviewing design with the landowner; assisting the landowner in securing a contractor; surveying and staking out the project site; inspecting ongoing installations/constructions; and certifying that projects meet contract standards.

The second level of implementing Whole Farm Plans requires the integration of a farm's physical, human, and time resources so that prescribed changes can be incorporated into the operational routine of the farm. This level of implementation involves an array of educational activities targeted at changing perceptions, attitudes, practices, and beliefs of farm managers.

Summary of New York Watershed Program—Additionally, in New York we have taken a similar approach to our statewide non-point source program. In accordance with guidance provided by state agencies, individual counties have formed County Water Quality Coordinating committees, which in turn have developed County Water Quality Strategies. These strategies identify water quality problems and outline programs to address these problems. The strategies focus on the use of educa-

tion and technical assistance to prevent and remediate water quality issues at the local level. Because these programs and actions originate at the local level, the opportunity for success is greatly enhanced. When citizens have ownership of solutions to problems, action occurs and progress follows. The farm community has responded positively on this issue, as they have in the past, to programs which recognize their needs while pursuing water quality objectives.

While we are still in Phase I of the process and much has yet to be accomplished to prove that the process ultimately works, I believe this farm-by-farm approach is tentatively accepted by the farm community in the watershed as a much preferred alternative to a traditional top-down, standard-setting, enforcement, penalty system of regulation. In fact, I am persuaded that the latter approach cannot be made to work for farms, each of which is somewhat different from the other.

Before moving on to NASDA's overall position on CWA reauthorization, I would like to summarize the important principles embodied in this approach to non-point pollution prevention that has been adopted as the alternative to a uniform regulatory system for the farm sector of New York City's watershed.

- The system for pursuing the City's water quality objectives, as they are affected by the agricultural segment of the watershed community, was arrived at by negotiation and consensus—not by fiat.
- The program is locally delivered and administered by an existing—not a new—group of institutions with whom farmers are familiar; who understand farming science, methods and techniques, and farm business operations; and whom farmers trust.
- The responsible regulatory institution—in this case, New York City's Department of Environmental Protection—has created contractual relationships with these locally based delivery entities to serve its public policy objectives, and has established a collaborative mechanism with the farm community generally to assure continued communication, momentum, and support.
- The cost of both the farm planning process and the installation of practices called for by each plan to achieve the pollution prevention goals of the responsible agency is financed by the responsible agency—or, in any case, not by the farmer. Once the front-end costs are overcome, these improvements will benefit the economic operation of the farm.
- The program is voluntary, but there is sufficient unchallengeable legal authority in the background, coupled with a time threshold for a high rate of sign-up, to spur participation.
- Improved and sustainable (unsubsidized) farm profitability, combined with 100 percent cost-sharing for planning and the installation of water-quality-related capital improvements and practices, creates strong incentives for farm participation.

NASDA POSITION

Reauthorization of the Federal Water Pollution Control Act (commonly known as the Clean Water Act) is an opportunity to review the quality of our nation's water resources, assess our efforts to clean-up impaired waters and prevent potential pollution, and set a course to protect this vital resource. Today my testimony will concentrate on the area of nonpoint source (NPS) pollution and agriculture's efforts to prevent such pollution. NASDA recognizes the need to address agricultural nonpoint source pollution which may have adverse effects on the environment and human health. Agricultural operations, along with urban, construction, septic and natural sources, require a comprehensive and coordinated management strategy, much of which is already in place, but in many cases inadequately funded.

In order to reduce complex and diverse nonpoint source (NPS) pollution, a commitment of time and resources is necessary, similar to the 20-year commitment our country has made to eliminating point source pollution. However, management of this problem will require a different approach than that of point source pollution because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities.

The Clean Water Act (CWA) is not alone in protecting America's waters from NPS pollution. Other ongoing programs at the federal, state and local levels must be funded fully, and coordinated with, not superseded by, the CWA. In particular, this includes the soil conservation and water quality provisions of the 1985 and 1990 farm bills and the state groundwater and source water protection programs of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA). The CWA reauthorization should not directly or indirectly create a federal water quality law or program

which supersedes, abrogates or impairs state water allocation systems and water rights.

PRINCIPLES OF THE CLEAN WATER ACT

The reauthorized CWA's central focus for NPS management solutions should be reasonable, voluntary, and based on incentives, education and technical assistance. NPS pollution management programs should emphasize the protection of water resources and state-designated water uses, including state-designated agricultural uses, recognizing the importance and needs of individual agricultural producers and other landowners affected by the CWA. This approach emphasizes the use of locally designed and applied, economically feasible, site-specific best management practices which do not infringe on private property rights.

The CWA contains valuable provisions for NPS management embodied in Section 319. Although Section 319 has been historically underfunded and has been hampered by bureaucratic roadblocks, all states now have approved Section 319 assessments and management programs. Amendments to the CWA should continue to focus on the 319 program as the means for states to identify nonpoint sources in critical areas, and to develop management programs to control discharge. Reauthorization of the CWA should provide increased funding and technical support for state management programs and local implementation. Management efforts funded by Section 319 should be directed to priority areas based on scientific assessments that identify water bodies with impaired or threatened uses. Priority, as determined by states, should be based on the magnitude of risk to human health, the protection of designated uses, and likelihood of further significant and unreasonable water quality degradation if no action is taken.

The proper management of NPS pollution lies in state and local efforts. As such, states should continue to identify and resolve their priority NPS water problems through administration of Section 319 funds. With state oversight and approval, local entities should continue to carry out these NPS programs. State and local programs should provide for a mix of research, development, education and technical and financial assistance for both planning and implementing actions aimed at achieving state designated uses. Agencies at the federal and state levels should harmonize objectives and coordinate funding for national and regional NPS management programs.

Strategies should be developed on a hydrologic unit, watershed-wide basis using an approach that includes the consideration of both surface and ground water quality. Programs should focus on cost-effective, site specific practices for individual operations with flexibility for implementation. Section 319 management programs on federal lands should be developed and implemented by the specific agency statutorily charged with management of the lands in question, rather than by regulatory authorities independent of that agency.

In order for Section 319 to work effectively for agriculture, the U.S. Department of Agriculture must play a lead role in the formulation and communication of technology-based best management practices in agriculture. USDA should assist in coordinating Section 319 programs with technology-based conservation measures adopted in the 1985 and 1990 farm acts, FIFRA pesticide regulations, wetlands protection, public lands management, and EPA groundwater policies.

An effective and cost-efficient response to water quality problems requires accurate and reliable information on the source, extent and impact of NPS pollution, as well as the effectiveness, utility and economic feasibility of conservation measures and best management practices. CWA reauthorization should include a strong financial commitment to further research, monitoring and assessment projects. Monitoring should include before and after sampling as well as frequent sampling during storm events and assessment of natural and historic loadings. Scientific research and monitoring projects should follow protocols developed by the U.S. Geological Survey and should be concluded on a watershed basis with local and state input. Representative pilot projects aimed at achieving market based incentives on a watershed or regional level should be encouraged. It is, however, inappropriate to provide the authority for citizen suits against individuals participating in NPS management programs. Moreover, a more prudent use of scarce resources is to provide monetary assistance to states for monitoring activities rather than to voluntary monitoring programs.

CURRENT EFFORTS TO PREVENT NPS

The existence of programs at all levels of government to protect water from potential NPS contaminants necessitates development of an effective coordination strategy to avoid conflicts and duplication of efforts. Failure to recognize this need

can lead to squandering of limited resources and may result in conflicting programs that may even increase the potential for pollution of ground water while trying to reduce the potential for pollution of surface water (or vice versa).

Approaches to protect water quality can be categorized as nonregulatory/voluntary, regulatory, liability, or comprehensive protection. Many farmers have voluntarily adopted best management practices and other measures that will help protect water from potential pollution. Continued research, education by public and private entities, technical assistance on developing or implementing water quality protection programs, economic incentives, and product stewardship are necessary to increase water resource protection.

Numerous efforts are underway to protect ground and surface water from potential NPS pollution. Among these are programs and legislation at all levels of government, that vary in type and structure. For the record, allow me to highlight a few of the federal, state and local regulatory and voluntary programs which currently exist.

The Coastal Zone Management Act—The original Coastal Zone Management Act (CZMA) was passed in 1972, amended in 1980, and reauthorized in 1990. The lead agencies for implementation of the latest CZMA programs are the Environmental Protection Agency (EPA) and the National Oceanic and Atmospheric Administration (NOAA).

Section 6217 of the 1990 legislation requires each state with a federally approved CZMA program to develop a "coastal nonpoint pollution control protection program" to implement coastal land use management measures for controlling NPS pollution. The states are able to provide maximum flexibility in establishing the state and local institutional arrangements to accomplish the control of NPS pollution. State programs, however, must be developed and implemented in conformity with national guidelines.

Federal Insecticide, Fungicide, and Rodenticide Act—Under FIFRA, the EPA collects environmental fate data that are used, among other things, to indicate whether a pesticide poses a threat to ground or source water. Based on such data, the agency may require label directions and precautions to inform the applicator that the pesticide must be used in a manner that prevents water supply contamination.

Also under FIFRA, the EPA may restrict, cancel, or temporarily suspend all or some pesticide uses that pose unreasonable risks to human health or the environment through contamination of water supplies.

The agency has proposed a Ground Water Restricted-Use rule that describes the criteria (i.e., a pesticide's tendency to leach) for identifying pesticides for possible restricted-use classification because of ground water concern. After the final rule is promulgated, EPA will initiate reviews to classify up to 30 pesticides as restricted-use chemicals because of their tendencies to leach to ground water. Restrictions may include limiting use to certified applicators.

Safe Drinking Water Act—Under the Safe Drinking Water Act's Public Water Systems Program (PWSP), the EPA regulated six pesticides and nitrate/nitrite in addition to other chemicals and biological contaminants. Under the drinking water regulations announced in January 1991, effective in July 1992, states must adopt new drinking water standards for 33 potential drinking water contaminants including 18 pesticides. The EPA has also developed Health Advisories for about 70 pesticides that are actual or potential ground water contaminants. In addition, EPA implemented new standards of 1 ppm for nitrite and 10 ppm for nitrate/nitrite as nitrogen (N) combined in July 1992.

EPA has established requirements for regular monitoring, public notification of contamination, and specific timeframes for removal of the contamination. Monitoring for the 18 pesticides covered under the new drinking water standards were phased in after July 1992. Such an approach gives states the opportunity to institute watershed and ground water protection measures to keep pesticides out of drinking water. EPA also conducts and enforces drinking water programs in states that do not have primacy or are not enforcing their programs adequately.

Comprehensive Environmental Response, Compensation and Liability Act—Superfund, created in 1980, is an important tool in EPA's response to the nation's hazardous waste problem. Approximately 31,000 hazardous waste sites have been identified. Some of these sites are in rural areas, and sometimes involve contamination of ground and surface water due to improper disposal of septic tank wastes and sludge containing hazardous substances such as PCBs, benzene, and toluene, or wastes from pesticides and fertilizer manufacturers. Estimated costs for cleaning up some of the Superfund sites are very high, running in the millions of dollars.

Toxic Substances Control Act—EPA has broad authority under Section 6 of the Toxic Substances Control Act (TSCA) to control manufacturing, processing, distribu-

tion in commerce, use or disposal of a chemical substance or mixture if it "presents or will present an unreasonable risk of injury to health or the environment." Under Section 4, EPA may require industry to test a chemical substance or mixture if the agency finds it "may present an unreasonable risk of injury to health or the environment". If the EPA decides that it lacks important information about toxicity or exposure, it can specify what information the industry must provide through additional testing if necessary.

Research on Transport and Transformation of Contaminants—In order to predict the movement of contaminants in the subsurface, and thereby predict potential human and ecological exposure, EPA's Office of Research Development (ORD) maintains a research program in transport and transformation of contaminants. Some of this research is done to predict the leaching behavior of agricultural chemicals. This includes advances in integrating process level information into predictive tools such as the pesticide soils leaching model PRZM, the pesticide ground water leaching model RUSTIC, and the development and application of the comprehensive environmental management model CEEPES to agricultural chemicals. In addition, a new effort is underway to support the Office of Water in determining the sorptive properties of soil as a factor in protecting wellheads from contaminant migration.

EPA has joined with the United States Department of Agriculture (USDA) and the U.S. Geological Service (USGS) in the Midwest Initiative on atrazine. Under a coordinated plan of study drafted in 1989, the three agencies selected the mid-continent soybean and corn-growing region to determine the regional factors affecting the distribution of atrazine, a herbicide of long-standing use, through the environment.

Information System for Preventing Ground Water Contamination from Pesticides—Tools exist to locate pesticide problem areas, and develop strategies for use of pesticides on a local level. These tools include models that have been developed to predict the leaching of pesticides to ground water, data that have been collected on soil properties and other relevant environmental factors, and geographical information systems for displaying and analyzing spatial information. These types of tools, however, have not been systematically integrated into a workstation framework of state and local risk management. ORD has initiated research to provide such a framework for states upon which they can develop locally meaningful pesticide management plans. The work will also include field evaluation and modeling schemes. The project is coordinated with related research on the effects of agricultural chemicals on water quality at USGS and USDA, in order to ensure integration of information and dissemination of results.

Methods for Assessing Aquifer Sensitivity to Pesticides—To assist states in assessing ground water vulnerability to pesticides as part of their efforts to develop pesticide management plans, EPA's Office of Ground Water and Drinking Water is preparing a technical assistance document on methods for assessing the natural sensitivity of aquifers to pesticide contamination.

President's Water Quality Initiative—The President's Water Quality Initiative (WQI), established during the Bush Administration, called for a vigorous effort to protect ground and surface water from contamination by agricultural chemicals, commercial fertilizers, and wastes, especially pesticides and nutrients. The WQI is using the combined expertise of USDA, USGS, EPA, and NOAA, to promote the use of environmentally and economically sound farm production practices, and to develop improved chemical and biological pest controls.

Under the WQI, USDA has established the USDA Water Quality Program to determine the precise nature of the relationship between agricultural activities and ground water quality; and develop and induce the adoption of agrichemical management and agricultural production strategies that protect ground and surface water quality.

Technical and financial Assistance Programs—USDA provides a number of technical and financial assistance programs to assist in protecting water resources.

- The *Agricultural Conservation Program (ACP)*, initiated in 1936, provides financial assistance to farmers for implementing approved soil and water conservation and pollution abatement practices. Cost-share payments may not exceed \$3,500 per year for 1-year agreements, or an average of \$3,500 for multi-year agreements. Except for Water Quality Special Projects, conservation priorities are set by states and counties based on local soil and water quality problems.
- The *Conservation Technical Assistance (CTA)*, initiated in 1936, provides Soil Conservation Service (SCS) technical assistance through conservation districts to farmers for planning and implementing soil and water conservation and water quality improvement practices.

- The *Rural Clean Water Program*, initiated in 1980 and ending in 1995, is an experimental program implemented in 21 selected projects under the authority of the Clean Water Act. It provides cost-sharing and technical assistance to farmers voluntarily implementing BMPs to improve water quality. Cost-sharing is limited to \$50,000 per farm.
- The *Extension Service* provides information and recommendations, in cooperation with SCS and conservation districts, on soil and water quality practices to landowners and operators.
- The *Farmers Home Administration (FmHA)* provides loans to farmers and associations of farmers for soil and water conservation, pollution abatement, and building or improving water systems that serve several farms.
- The *Rural Conservation and Development Program*, initiated in 1962, assists multicounty areas to enhance conservation, water quality, wildlife habitat and recreation, and rural development.
- The *Great Plains Conservation Program*, initiated in 1957, provides technical and financial assistance in Great Plains states to farmers and ranchers who implement total conservation treatment of their entire operation. Cost-sharing assistance is limited to \$35,000 per contract.
- The *Small Watershed Program*, initiated in 1954, provides technical and financial assistance to local organizations for flood prevention, watershed protection, and water management.
- The *Water Bank Program*, initiated in 1970, provides annual payments for preserving wetlands in important migratory waterfowl nesting, breeding, or feeding areas.
- The *National Agriculture Library* collects and distributes information on all aspects of U.S. agriculture, and has received special funding to develop a new information program on agriculture and water quality.

USDA Research Programs—One of the objectives of USDA's Research Plan for Water Quality is to improve existing and develop new cost-effective agricultural systems to address water quality problems. USDA's Agricultural Research Service (ARS), Cooperative State Research Service (CSRS), and Economic Research Service (ERS) conducts research on agriculture and water quality. ARS conducts research on new and alternative crops and agricultural technology to reduce the impacts of agricultural production on soil and water. CSRS coordinates soil conservation and water quality research conducted by State Agricultural Experiment Stations and land grant universities. CSRS allocates funds appropriated by Congress for special and competitive grants for water quality research. ERS estimates the economic impacts of existing and alternative policies, programs, and technology for preserving and improving soil and water quality. Along with the National Agricultural Statistics Service, ERS collects data on agrichemical use, agricultural practices, and costs and returns.

Farm Bill Programs—The Food Security Act of 1985 has four major provisions that contribute to meeting water quality protection objectives; the Food, Agriculture, Conservation, and Trade Act of 1990 adds four additional programs.

- *Conservation Reserve Program*—The Conservation Reserve Program (CRP), authorized in the 1985 Farm Bill and expanded in size and scope to cover water quality concerns, allows USDA to make annual rental payments to landowners who voluntarily retire highly erodible cropland and other environmentally critical lands from production for 10 years. It pays up to 50 percent of the cost for establishing a soil-conserving cover crop on the retired lands.
- *Conservation Compliance*—The Conservation Compliance provisions require farmers who produce on highly erodible cropland to develop and implement a conservation compliance plan by January 1, 1995. The requirement affects 40 percent of U.S. farmers, 135 million acres of highly erodible land, and involves 1.3 million plans. Less than 2 percent of highly erodible land will be uncovered once the plans are implemented. A combination of the conservation reserve and conservation compliance program is projected by USDA to reduce erosion by 1.5 billion tons per year, half of all erosion on all cropland.
- *Sodbuster & Swampbuster Provisions*—Sodbuster provisions prevent farmers from new production on highly erodible land unless it is done under an approved conservation plan. Swampbuster provisions prevent farmers who convert wetlands to crop production from collecting farm program benefits, unless USDA determines that conversion would minimally affect wetland hydrology or biology.
- *Wetlands Reserve Program*—The Wetlands Reserve Program (WRP) is a voluntary program offering landowners a chance to receive payments for restoring and protecting wetlands on their property. Authorized by the 1990 Farm Bill,

the WRP provides a unique opportunity for farmers to retire marginal cropland and reap the many benefits of having wetlands on their property. WRP obtains 30-year or permanent conservation easements from participating landowners and provides cost share payments for wetland restoration. Currently, 50,000 acres are under easement to restore previously converted wetlands, reducing NPS pollution potential, and enhancing wildlife habitat, flood control, and ground water recharge.

- *Water Quality Incentive Program*—The goal of the Water Quality Incentive Program (WQIP) is to achieve source reduction of agriculture pollutants by implementing management practices (BMPs) in an environmentally and economically sound manner on 10 million acres of farmland by the end of 1995. USDA provides agricultural producers with the necessary financial, educational, and technical assistance required to make changes in management systems to:

- 1) restore or enhance the impaired water resources where agricultural NPS pollution has a detrimental effect; and
- 2) prevent future impairments.

Producers must submit applications for enrollment, and a long-term agreement is developed, generally for three years. The WQIP incentive payment limitation is \$3,500 per person per year for up to 5 years. Eligible acres for WQIP has expanded to include areas identified in state NPS management plans (Section 319), areas with shallow karst topography, and other environmentally sensitive areas.

- *Conservation Environmental Easement Program*—The Conservation Environmental Easement Program provides for permanent easements on lands that pose a significant environmental threat. The exact eligibility for these lands is yet to be determined, and funding is not yet available.
- *Integrated Farm Management Program Option*—The Integrated Farm Management Program Option adds planting flexibility to federal farm programs, and encourages farmers to adopt resource conserving crop rotations to help prevent soil erosion and protect water quality on 5 million acres. The program requires farmers to carry out an approved farm management plan to promote the use of soil conserving crops and rotations on at least 20 percent of their crop base qualified for federal programs.

National Water Quality Assessment Program—The National Water Quality Assessment Program is a major national assessment designed to describe the status and trends of U.S. waters and identify the factors that affect water quality. In the pilot phase of the project, the USGS is investigating the extent and location of ground water pollution by agricultural chemicals in several regions of the U.S.

Mid-Continent Herbicide Initiative—In cooperation with USDA's Midwest Initiative, USGS is conducting the Mid-Continent Herbicide Initiative, a five- to ten-year research program on the impact of the agricultural herbicide atrazine on ground and surface water.

USGS Federal-State Cooperative Program—This program is a partnership for water-resources investigations involving 50-50 cost-sharing between the USGS and more than 1,000 cooperating state or local government agencies. The USGS performs most of the work on behalf of the cooperators. A variety of hydrologic data collection activities and water-resources investigations are included in the program. Examples include providing support for mapping aquifers, for monitoring pesticide contamination, and assisting in developing wellhead protection programs.

State Water Resources Research Institutes Program—Under this program, USGS provides grants to 54 state and U.S. territory Water Research Institutes at land-grant colleges or universities. The grants support research, information dissemination, and training for students in water resources fields.

USGS Information Dissemination Programs—Through its annual National Water Summary report, USGS provides water quantity and quality information on a state-by-state and national basis to aid policymakers in the analysis and development of water policies, legislation and management actions. The report also includes case studies of NPS contamination and summaries of studies on managing and coordinating federal and state water protection efforts.

USGS' Hydrologic Data Collection Program provides information on the quantity, quality, location, and use of the nation's surface and ground water. Data collection stations are maintained at selected locations to provide records on streamflow, reservoir and lake storage, ground water levels, and the quality of surface and ground water. These data form an information base that support national and regional water-resource assessments.

Maine's Pesticide Control Regulations—The Maine Pesticide Control Act of 1975 is the primary legislative authority to regulate the labeling, distribution, storage, transportation, use, and disposal of pesticides in Maine. Under this Act the state may cancel the registration of a pesticide, restrict its use, or suspend its use if it poses an imminent hazard. Part of the state's pesticide registration fee is deposited into a fund to cover the costs of Maine's Integrated Pest Management (IPM) program. The state is adding training in ground water protection to its restricted-use pesticide certification program. The state's Pesticide Control Board has the authority to designate critical areas where pesticide use would present an unreasonable threat to water quality.

Iowa's Restrictions on Atrazine—Prior to EPA's classification of atrazine as a restricted-use pesticide in 1991, Iowa classified atrazine as a restricted-use pesticide, limiting its use to certified applicators. Iowa reduced the maximum allowable application from 4 to 3 lb/acre/year, and restricted maximum application to 1.5 lb/acre/year in contaminated or vulnerable ground water areas. Additionally, Iowa now prohibits atrazine application within 50 feet of a sinkhole, well, cistern, lake, or surface water impoundment, and mixing, loading and repackaging within 100 feet of the same.

California's Pesticide Control Measures—Proposition 65 prohibits a person in business with 10 or more employees from knowingly discharging a chemical known to cause cancer or reproductive toxicity into water or onto or into land where the chemical may pass into a source or potential source of drinking water. The Pesticide Contamination Prevention Act was passed specifically to try to prevent or minimize future ground water contamination by pesticides.

Nebraska's Restrictions on Fertilizer Use—The Central Platte Natural Resource District (a multi-county regional political subdivision) has established restrictions on nitrogen fertilizer use in a designated Groundwater Management Area. The program has three phases depending on the concentration of nitrates found in wells. All phases include requirements for education, collection of soil and water samples, and efficient fertilizer use. The most severe phase totally bans applications.

Fillmore County, Minnesota's Erosion Control Ordinance—Fillmore County is located in a karst area of Minnesota and has identified agricultural runoff and erosion as sources of both surface and ground water contamination. The County's Erosion Control Ordinance considers any occupiers of farmland to be in compliance if: (1) they are using soil conservation practices approved by the County Soil and Water Conservation District Board; (2) they do not have rills, gullies, or sediment deposits in their fields; and (3) their farming methods do not create sediment problems on adjoining properties. Violators of the ordinance have 30 days to work with the County Soil and Water Conservation District to develop a plan that must include: (1) specific practices to stop the sedimentation; and (2) a timetable for completing the practices.

Maryland Critical Area Program—The goal of the program is to improve the water quality of the Chesapeake Bay. The Maryland Conservation Reserve Program will pay farmers \$20 per acre annually to enroll cropland within critical areas and along stream borders in the Federal CRP.

Chesapeake Bay Nutrient Reduction Program—The Chesapeake Bay Agreement of 1987 calls for a 40 percent reduction of nitrogen and phosphorus entering the main-stream of the bay by the year 2000. Maryland, Pennsylvania, and Virginia have initiated nutrient management programs to assist in reducing agricultural NPS pollution to the Bay. After over five years of significant cooperation on the part of the landowners, experts now believe that agriculture may not be the source of nutrient loadings to the Chesapeake Bay. In fact, the Environmental Defense Fund released a 1988 report which considers septic systems, high density development, sewage treatment plants, and atmospheric deposition as the dominant sources of nitrogen in the Bay.

- Maryland's Cooperative Extension Service assists farmers in the development of nutrient management plans under *Maryland's Nutrient Management Program*. Since 1989, farmers have prepared 748 plans, covering 49,966 acres of cropland. Nutrient management plans include manure tests for nutrient content, soil tests, documentation of crop histories and manure management, documentation for a statewide nutrient management data base, and personalized service from consultants. First priority for preparation of the plans is given to farmers applying for state cost-share funds for all animal waste storage BMPs.
- *Pennsylvania's Nutrient Management* cost share program is funded in part by the Chesapeake Bay Program. Cost sharing for installation of BMPs is available to farmers within priority watersheds where they must adopt nutrient management plans. Such plans include manure tests, soil tests, summaries of recom-

mended nutrient applications, and provisions for verifying nutrient and pollution reduction. Conservation districts provide technical assistance in developing the plans, and a mobile nutrient laboratory assists with rapid analyses of soils, water, and manure.

- *Virginia's Chesapeake Bay Preservation Act* requires farmers in the 13 coastal counties to develop water quality management plans that include integrated pest management plans, soil conservation plans, and nutrient management plans. Since 1989, the state has required farmers statewide to develop nutrient management plans to receive cost share funds for animal waste BMPs. A new law allows tax credits for purchases of manure and pesticide spreaders for farmers with nutrient management plans approved by their local conservation district.

Kansas' Cost-Share Efforts under the State Water Plan—In 1989, Kansas established the State Water Plan Fund to serve as a dedicated source of funding for state water planning activities. The economic incentives are available both for practices to treat highly erodible land and practices to protect water quality by limiting runoff of agricultural contaminants.

North Carolina's Cost-Sharing to Reduce Nutrients—The voluntary North Carolina Agricultural Cost-share Program was established to protect surface water from contamination by sediments, nutrients, animal wastes, and pesticides. The program pays farmers 75 percent of the average cost to implement appropriate BMPs.

Jefferson County, Washington's Water Quality Improvement Fund—Washington state provides \$200,000 to Jefferson County for loan to county residents in a low-interest loan program—the Jefferson County Water Quality Improvement Program—which finances major NPS pollution control projects. The funds for the state loan are from the state's Revolving Loan Fund, capitalized by an EPA grant and a 20 percent state matching grant. The Fund is designed to encourage and assist county residents in repairing or upgrading existing septic systems under the direction of the County Health Department and in designing and implementing farm plans and agricultural BMPs under the direction of the County Conservation District.

Iowa's Education and Technical Assistance Efforts—Iowa's 1987 Groundwater Protection Act establishes a program for research education, and demonstration projects to address ground water problems caused by agricultural contaminants and other sources. The law requires the state Department of Agriculture and Land Stewardship (DALS) to promote the adoption of BMPs for soil conservation and for reducing ground water contamination from agricultural chemicals. As part of this effort, DALS is helping finance the Private Pesticide Applicator Training Program conducted by Iowa State University Cooperative Extension Service, which is educating over 60,000 farmers on environmental and personal safety when applying fertilizers and restricted-use pesticides. The program also covers nonchemical methods to control weeds and pests.

Wisconsin's and Minnesota's Farmstead Assessment Worksheets—Wisconsin and Minnesota have prepared pilot versions of worksheets to assist farmers in assessing the effectiveness of farmstead practices in protecting drinking water. Practices for assessment include well condition, pesticide storage and handling, fertilizer storage and handling, household wastewater treatment, and livestock waste storage. Accompanying each worksheet is a separate publication with recommendations on modifying practices to minimize pollution risks, and suggested sources for additional information.

Maine's BMP Manual—Maine collaborated with SCS, the Extension Service, and farmers to produce a BMP manual that educates farmers on the characteristics of agricultural chemicals and offers practical tips on protecting water from contamination.

Virginia's Outreach Efforts—The Virginia Water Resources Center has developed instructional materials, exhibits, and publications on water quality protection. The Virginia Extension Service conducts water quality related outreach activities for the agricultural community as well as local citizens, local government staff, and students.

State Research and Data Management—Basic and applied research that supports water quality protection efforts is being carried out by the states, mostly at state Agricultural Experiment Stations, landgrant universities, and Water Resources Research Institutes. Much of this research is at least partially funded by federal grants. States are also developing data management systems to store and maintain the information they need to implement their water quality protection efforts.

- *Connecticut*—The College of Natural Resources of the University of Connecticut conducts research on pesticide usage issues and on IPM, while the state Agricul-

tural Experiment Stations study the fate of pesticides in the environment. Connecticut has an extensive data base on the hydrogeological conditions of the state. In cooperation with USGS, the state Department of Environmental Protection has collected information on all watersheds, the properties and distribution of aquifers, depth to water tables, water quality in vulnerable or sensitive areas, locations of public water supply wells, locations of pollution sources, etc.

- *New York*—The state Water Resources Research Institute at Cornell University conducts research on the water quality effects of agricultural chemicals. Researchers are evaluating the relationship between pesticide application practices, crop production, and ground water quality for potato crops. In addition, the Institute is interested in studying the effects of soil organisms on chemical transport, microbiological degradation of chemicals, transport of microbes within the soil, and the toxic effects of ground water contamination on ecological systems. Faculty at Cornell, Oregon State University, Michigan State University, and the University of California at Davis have been developing a toxicological information system called EXTOXNET. The system will be used by Extension agents to answer questions about current or potential contamination by agricultural contaminants.
- *Pennsylvania*—Pennsylvania State University is involved in several research efforts. First, Penn State and three other U.S. universities are studying the environmental fate of pesticides under minimum and conventional tillage. Second, Penn State is involved in a cooperative venture to reduce NPS pollution in the Chesapeake Bay watershed. Third, the university participates in a well-funded program to develop expert systems for pest management on all crops. Fourth, Penn State is interested in developing insect and disease forecasting and monitoring techniques; these include counting insects and the use of weather-based data to predict the occurrence of plant pathogens in food crops. Finally, Penn State is studying pest resistance in apples in a cooperative project with the University of Vermont and four or five other states to study how to increase resistance in host or crop plants through selective breeding.

Comprehensive State Ground Water Protection Program—Since 1984, EPA has encouraged states to develop state ground water protection strategies and programs, and supported the states' efforts with technical and financial assistance. In 1989, EPA established a high-level Ground-Water Task Force to "develop a strategy for the direction EPA will take in ground-water protection." The task force released its final report that sets forth a new strategy to ensure comprehensive protection of the nation's ground water resources. A key component of this strategy is to actively involve state officials in developing and implementing Comprehensive State Ground Water Protection Programs (CSGWPPs). EPA will promote the development of CSGWPPs through technical and financial assistance to the states. To the extent authorized by federal statute and consistent with federal program objectives, EPA will defer to state policies, priorities, and standards once the agency recognizes that a state has developed a comprehensive protection program.

Wellhead Protection Programs—The Safe Drinking Water Act requires each state to prepare a Wellhead Protection (WHP) Program to protect public water supply wells from all potential sources of contamination. In many instances, regional agencies and local governments have taken the initiative in pursuing WHP. As of September 30, 1992, EPA has approved 25 state WHP programs. Some states are developing measures to deal with agricultural sources within WHP areas. In Florida, regulation of pesticide use within WHP areas is awaiting modeling of pesticide behavior in soil and water for selected restricted-use pesticides. Also, efforts to develop policy or regulations for governing nutrient discharges to ground water have begun. The 1990 Farm Bill includes a provision to make cropland within WHP areas eligible for inclusion in the WQIP and the CRP.

Drinking Water Program Implementation—The Safe Drinking Water Act directs EPA to establish minimum national drinking water standards which set legally enforceable limits on the amounts of potentially harmful substances, including some pesticides and nitrate, in drinking water. Under Congress' direction, EPA has granted, since 1974, primary enforcement authority to fifty states and four territories.

Pesticide Management Plans—Because of site-specific differences in ground water sensitivity and pesticide usage, EPA believes that states are in the best position to tailor pesticide prevention management measures to local conditions. Under the Agency's pesticide and Ground Water Strategy released in 1991, states implement State Pesticide Management Plans (SMPs). In line with this approach, EPA is providing funding and guidance to states to assist them in developing generic SMPs, and in building the state's capacity to evaluate such factors as ground water vulnerability, monitoring data, and how and where the pesticide of concern may be used.

The ground water strategy explains that under FIFRA, EPA may require states to develop chemical-specific SMPs for a particular pesticide of concern as a condition of continued use of that pesticide. The SMPs may vary widely from state to state, depending on a state's ground water sensitivity assessments, the level of pesticide usage in the state, and the state's ground water protection philosophy. The SMPs must include several components, including discussion of roles and responsibilities, legal authorities, prevention actions, available resources, monitoring, enforcement, and response detections.

Underground Injection Control Program—A provision of the Safe Drinking Water Act mandates the development of an EPA-approved underground injection control (UIC) program for each state, U.S. possession, or territory. The purpose of the program is to prevent contamination of underground sources of drinking water by injection wells, classified into five categories by the EPA. Class V wells include agricultural drainage wells, which may pose a high potential for ground water contamination. Agricultural drainage wells may receive field drainage from precipitation and flood waters, irrigation return flow, and animal yard, feedlot, or dry runoff. Potential contaminants include suspended solids, pesticides, nutrients, salts, organics, metals, and microbes including pathogens. Current EPA regulations authorize Class V wells to operate by rule if: (1) their existence was reported to the states or EPA within the specified time; and (2) they do not contaminate an underground source of drinking water to the extent that it would violate a maximum contaminant level (MCL) or otherwise endanger public health.

S. 1114, THE WATER POLLUTION PREVENTION AND CONTROL ACT OF 1993

The Water Pollution Prevention and Control Act of 1993, S. 1114, is a comprehensive reauthorization of the CWA. The bill would extend and enlarge the scope of the state revolving funds, strengthen the state watershed planning process and the NPS control program, and address the problem of combined storm water overflows. It also makes significant changes to provisions related to toxic discharges, permits, and enforcement.

Environment and Public Works Committee Chairman Max Baucus and Ranking Minority Member John Chafee are to be commended for developing this legislation which is currently serving as the major focus of the reauthorization debate in the Senate. The bill is markedly improved from S. 1081, legislation which was introduced in the 102nd Congress. The Senators revised S. 1081 to incorporate many of the principles I've outlined today; concepts like flexibility, watershed-wide protection, and site-level planning.

At this point I would like to address a few specifics in S. 1114.

Water Quality Standards—S. 1114 modifies the water quality standard goals of the CWA. As opposed to the current "fishable and swimmable" standard of the Act, the bill adds a "wildlife" and "social development" criteria to the standard. NASDA cautions the committee against going too far in creating the new standard which becomes the bright line measurement for the watershed management plans in the out years. Bio-assessments tend to be acceptable indicators of potential problems, but they are not appropriate for regulatory purposes. We must not overburden economic production with costly practices simply for an arbitrary "social" standard, and we must remember that the Endangered Species Act is designed to protect such species. While wildlife habitat provides some indication of water quality, Congress should not move too far in that direction.

Monitoring and State Reports—It is vital that an improved system for monitoring nonpoint source pollution is developed. While it is appropriate to use current information in the two year start-up period of S. 1114, we must do a better job of monitoring pollution contribution and improvement during phase one of the planning process. Current Section 305(b) reports do not provide EPA with information in a standard form which allows for accurate reporting. Current reports, which compare apples to oranges, are incomplete and inaccurate. Since S. 1114 increases the monitoring responsibilities of the states, and uses that information to determine future requirements, the system must be improved and standardized so that the information is accurate and usable by the states and EPA. The Water Quality Council established in S. 1114 should be a positive step forward to improving the system.

The citizens monitoring provisions of the bill should be completely deleted. Statutory language is not necessary for the public to make comments to states about water quality. In times of scarce economic resources at both the federal and state levels, funds for monitoring training and education should be provided to the states to improve their monitoring abilities, not used to fund or educate a band of vigilantes who lack the scientific expertise to assess water quality or to properly monitor

change. The citizens monitoring provisions of S. 1114 do not help the states. In fact, in many cases, the provisions will harm the states abilities to perform their monitoring duties.

Site-Specific Plans—In general, S. 1114 has provided the flexibility and site-specific planning opportunities that have proven workable in a number of areas, including the New York program we are explaining today. NASDA is an active participant in the Agriculture Clean Water Working Group, and that group is eager to work with this Subcommittee to address specifics about the phase one and phase two planning periods so that necessary modifications can be made to the bill that are workable at the state and local levels.

The final CWA product must stress the need for site-specific plans to remain flexible and be based on sound technical and financial assistance. A mandatory hammer approach does not work because the Agencies cannot enforce them properly, and mandatory programs create an atmosphere of animosity rather than one of cooperation. As you will see with the New York experience, technical and financial assistance in a cooperative fashion is successful, whereas mandatory hammers are not.

Specifically in phase one, S. 1114 provides an automatic exemption for producers with conservation compliance plans. NASDA recommends that Congress expand that provision to include producers with Water Quality Incentive program plans, Integrated Farm Management Option plans, a whole-farm management plan under a state or regional program (like the Chesapeake Bay program), and other similarly strong programs which provide as much pollution prevention management as the conservation compliance plan or that required by S. 1114.

The Subcommittee may want to also review the Rural Clean Water Program (RCWP). Section 208 of the CWA provided that states prepare statewide and regional plans, based on watersheds, for the prevention of both point and nonpoint source pollution. Rural NPS pollution was addressed through the establishment of the RCWP as a parallel effort complementing the funding of municipal sewage districts. This program was very successful in the pilot areas where it was implemented.

Watershed Definition—Phase two of S. 1114 establishes the concept of watershed-wide planning, an approach which allows for targeting of scarce resources to impaired areas. It is important that watersheds be defined as subwatersheds for the purposes of these provisions rather than one of the 21 watersheds in the country.

States, as appropriate, have no authority to control NPS outside of the state boundaries. However, in many cases watersheds will cross state lines and some type of accommodation needs to be made for these circumstances. The legislation provides EPA the authority to mediate after a problem is created. NASDA recommends that language be include provide an opportunity for governors to work cooperatively to address the situation before problems occur.

Funding and Time Table—S. 1114 basically provides 10 to 12 years and limited federal funds to manage NPS. The federal government has dedicated over 20 years and a tremendous level of federal funding to control point source pollution. Congress should not expect agriculture and other nonpoint sources to achieve the more complex pollution prevention in a relatively short period of time with few federal dollars. Congress has not funded Section 319 at levels necessary to implement programs fully, and with the current budget atmosphere, there is no reason to believe that additional appropriations are forthcoming. S. 1114 can authorize spending (and its authorization levels are too low), but the appropriations process tends not to fully fund these programs. Further, all indications from the Administration are that funding at the levels in S. 1114 will not be available. When that occurs, the states are left holding the bag. Unfunded federal mandates have put an economic strain on states which they can no longer absorb. And when both the federal and state governments fail to provide the funding necessary, it's the producer who suffers.

NASDA believes that phase one should be ten years in length rather than five. Five years simply is too short a period to properly develop and implement site-level plans, and then monitor the results. We must remember there is a lag time between implementation of practices and a corresponding water quality benefit.

CONCLUSION

Mr. Chairman, thank you for the opportunity to participate in this very important hearing on nonpoint source pollution and reauthorization of the Clean Water Act. I would encourage the Subcommittee to review in detail the New York City Watershed Program. Many of the principles embodied in the New York City watershed agricultural arrangement should be strongly considered when Congress reauthorizes the Clean Water Act (CWA). In order to reduce complex and diverse nonpoint source pollution, a commitment of time and resources is necessary, similar to the 20-year commitment our country has made to eliminating point source pollu-

tion. However, management of this problem will require a different approach than that of point source pollution because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities. Agricultural operations, along with urban, construction, septic and natural sources, require a comprehensive and coordinated management strategy, much of which is already in place, but in many cases inadequately funded. As has been the case in New York, the NPS management programs in the CWA should be reasonable, voluntary, and based on incentives, education and technical assistance.

I'll be happy to answer any questions you may have.

STATEMENT OF ALBERT F. APPLETON, COMMISSIONER, NEW YORK CITY
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. Chairman, members of the Subcommittee, I am Albert F. Appleton, Commissioner of Environmental Protection for the City of New York. In addition to setting environmental policy, the Department of Environmental Protection is the City's water and sewer authority. I am here today to express New York City's support for the swift reauthorization of the Clean Water Act and for strong nonpoint source pollution control provisions. I am particularly pleased to be testifying with Commissioner McGuire, my colleague from the New York State Department of Agriculture and Markets. The Department of Agriculture and Markets and the City's Department of Environmental Protection, along with communities and citizens in the City's upstate watershed, are joining together in ground breaking nonregulatory, goal-oriented partnerships that, through nonpoint source pollution control and watershed protection, will preserve New York City's unparalleled drinking water supply.

Great improvements to water quality have been realized since the Clean Water Act's enactment. At the same time, it is widely recognized that new clean water strategies are now required. Recent studies, both federal and others, have consistently concluded that, as industrial wastewater and municipal sewage discharges come under increasing control, pollution from nonpoint sources is now the most significant cause of water quality degradation. If the Congress does nothing else in reauthorizing the Clean Water Act, it must commit program and financial resources proportionate to the scope of the nonpoint source problem. Nonpoint pollution sources must be attacked today as aggressively as point sources have been since the enactment of the Act.

The two keys to controlling nonpoint source pollution are pollution prevention and environmentally-appropriate land use management. One of the clearest lessons of the Dinkins Administration's aggressive watershed protection, harbor-estuary, and other environmental protection programs is that it is significantly more cost effective to prevent pollution than it is to clean it up. Another lesson is that the lack of proper land use safeguards and the misuse of environmentally-sensitive areas are principal causes of nonpoint source pollution. No nonpoint source pollution control programs will be successful without addressing these problems. Pollution prevention and environmentally-appropriate land use must be integrated with point source controls. This will require the flexibility to apply a broad array of strategies. Comprehensive, ecosystem-wide programs that address all sources of pollution and reflect the site-specific water quality needs of diverse aquatic ecosystems will achieve our water quality goals. If the main emphasis is mechanically placed on technological approaches or one-size-fits-all planning systems and best management practices, we will not only fail, but we will have misspent billions of dollars in the process.

WATERSHED PLANNING

As S.1114 recognizes in its provisions for watershed planning, these objectives require new institutional arrangements, ones that recognize that nonpoint source pollution control is a vital element of watershed planning. No city in the Nation is more committed to watershed planning than is New York City. Under the Dinkins Administration, a watershed-wide ecosystem planning approach has guided the City's extensive drinking water and harbor-estuary policies. I would like to discuss that experience, highlighting our agricultural program, and then comment on S. 1114, particularly as it addresses nonpoint source controls.

A) Drinking Water Protection

Under New York State law, New York City's watershed regulations are state law in its two upstate watersheds—the Croton and Catskill-Delaware systems—which encompass 19 reservoirs and over 1900 square miles, an area nearly the size of Delaware. These watersheds are the source of drinking water for nine million consumers each day—about half New York State's population. Nearly one million of these consumers reside upstate, while the remaining 8 million reside or work in New York City. The City's drinking water supply is of such exceptionally high quality that it often wins contests. To protect this rich natural bounty, the Dinkins Administration, in cooperation with the State, and local upstate governments and citizens, is implementing a comprehensive watershed protection plan.

In developing its comprehensive watershed protection strategy, the City has emphasized two fundamental ingredients. First, wherever appropriate, the City's watershed protection plans reflect the view that the best management of the land and water resources encompassing major drainage systems will occur not through fiat but with the active participation and cooperation of states, localities, regulated entities and citizens. Second, the City is focusing on pollution prevention and reduction, rather than regulation for its own sake. Thus, the City is pursuing a program whereby its regulatory structure sets the environmental targets but can be administered flexibly—or even waived—if the City's environmental objectives can be more readily or less onerously achieved through locally-based nonregulatory approaches.

The City's revised and enhanced watershed regulations place stringent controls on septic tank installations, stormwater and wastewater treatment plant discharges, development in environmentally-sensitive areas, the storage of petroleum and hazardous materials, the use of pesticides and fertilizers, the disposal of snow, and the protection of stream corridors through vegetative buffer zones and other means.

A similar regulatory structure was considered for agriculture. These proposals were met with immediate and vociferous resistance from the farm community, which claimed that the draft regulations would drive many farms out of business. After initial review, the City was satisfied that these objections, though perhaps overstated, had merit. Recognizing that good farming techniques can both preserve land and yield economic benefit, the City, with the indispensable assistance of the Department of Agriculture and Markets as facilitator, created a watershed agricultural task force to review the City's draft watershed regulations. After a year of discussion and mutual education, the task force, which was comprised of farmers and representatives of local and City government, agreed on a watershed agriculture strategy with the following key components:

- Withdrawal of the City's draft agriculture regulations, except for provisions against willful polluters and increased pollution loading, and substitution of the regulations with a "Whole Farm Planning" program. Whole Farm Planning involves the analysis of pollution sources and the development of plans to implement best management practices uniquely tailored to fit each farm's topographical conditions and business practice. These activities are conducted by a county project team comprised of local farm institutions;
- Targeted City Funding of the programs and best management practices, beyond any cost-sharing programs available through Soil and Water Conservation Districts;
- Voluntary participation by individual farmers, coupled with a pledge by watershed agricultural leaders that unless 85% farmer participation is obtained within five years, the City can reinstate agricultural regulations. The program is to be formally evaluated in 1997;
- Establishment of a Watershed Agricultural Council representing State, City, local government agencies, and the farm community, to monitor and assist the program;
- Development by Cornell University water quality and agricultural experts of new best management practices specifically targeted to Safe Drinking Water Act concerns, such as pathogen control.

Today, thanks to Whole Farm Planning, watershed farmers and the City are enjoying the first collaborative relationship in a hundred years. The Agricultural Council meets on a regular basis, and Phase I of the projects, involving ten pilot farms and the development of a new set of best management practices to control pathogens, is well underway. City funding for Phase I totals \$3.4 million dollars.

We can share three lessons from the program to date. First, to reiterate, be firm with goals but flexible as to means. It has been the willingness of the farm community to accept the City's water quality goals that has enabled the City to allow the proposal of a locally-managed program to attain those goals. Second, local stakehold-

er leadership is crucial. I cannot praise strongly enough local farm leaders, such as Howard Nichols and Bill Murphy, and the determination of State Agriculture and Markets Commissioner Richard McGuire and Deputy Commissioner Dennis Rapp to make this program succeed and to take the real political risks necessary to realize that goal. Third, bringing together diverse stakeholders, often with conflicting interest, requires defusing rhetoric and establishing a common language. For example, farmers were absolutely determined that the program should be voluntary. Environmentalists and regulators believed a voluntary program would fail to produce sufficient progress. In the end, we resolved this conflict by recognizing the legitimacy of both perspectives. Thus, as I described earlier, the program is voluntary but sets an overall participation goal of 85% that the farm community has agreed to attain.

The success to date of Whole Farm Planning has sparked broader discussions between the City and a quasi-governmental organization of watershed community leaders, known as the Coalition of Watershed Towns. Several working groups within the Committee are examining a variety of issues and methods of City-watershed town collaboration. From these discussions a new concept, called "Whole Community Planning," has emerged. Whole Community Planning involves local watershed communities, often ones that have been resistant to zoning and other planning initiatives historically, in charting environmentally-appropriate growth and protecting local water resources from pollution and the perils of unrestrained development.

In return for the active participation of these communities, the City is considering providing assistance to communities with approved whole community plans meeting specified environmental criteria, such as variances from certain otherwise applicable regulations and funding for certain of the best management practices or infrastructure improvements that approved plans may prescribe. Many of these improvements will benefit both water quality and local communities simultaneously. Although Whole Community Planning is in its early stages—five towns have either received start-up funding or signed on as pilot towns—its great potential is apparent.

In connection with Whole Community Planning, the City is involved in a range of other collaborative projects. We are working on programs to clean and upgrade private septic systems and to arrange septage disposal at strategically-located treatment plants throughout the watershed. The City is also working with local environmentalists and anglers to promote stream corridor protection through streamside planting, and with local schools in stream monitoring projects. Overall, the City has committed \$120 million in its ten-year capital budget for future watershed protection participatory programs.

We believe that collaborative efforts that protect both water quality and local interests, such as Whole Farm Planning and Whole Community Planning, can be the future of watershed planning and nonpoint source pollution control. To complement these collaborative ventures, however, the City is taking several independent actions.

A key component of nonpoint source pollution control programs must be the protection of environmentally-sensitive lands, starting with wetlands, which provide a variety of natural filtration benefits, and, if necessary, land acquisition. The City has budgeted \$47 million for upstate land acquisition alone this year, and plans to commit, over the remainder of the decade, as much as \$150-200 million more, depending on a variety of factors, for the acquisition of areas around reservoirs and stream corridors, and for the protection of wetlands and other environmentally-sensitive lands. This important nonpoint pollution prevention initiative should have the assistance of SRF funding. In areas without whole community planning, we are also conducting tightly-directed reviews of proposed land development and filing suits when necessary to enjoin chronic discharge violations and unauthorized, environmentally-insensitive development.

The City is backing up its watershed programs with science as well. We are undertaking a GIS-based characterization and assessment of the entire watershed. This data will assist the Department in conducting comprehensive analyses of reservoir and tributary water quality, soil and slope conditions, proposed development impacts, and various nonpoint source pollution attributes, as well as improved enforcement of our regulations. All of this information will be made available to interested watershed communities and other agencies for their own analyses and planning.

Together, these and a variety of other watershed protection efforts too numerous to mention, comprise what is probably the largest municipal watershed protection effort in recent history. The City has hired hundreds of staff and committed hundreds of millions of dollars over the next decade to watershed planning, because the Dinkins Administration is committed to a water quality strategy that aggressively

controls point and nonpoint source pollution, that emphasizes anti-degradation, and that is preventive rather than reactive.

B) Harbor and Estuary Protection

The nation's estuaries are complex and imperiled natural systems that do not conform to political boundaries. Their preservation often requires interstate and, sometimes, international cooperation. Pursuant to section 320 of the CWA, New York and Connecticut have undertaken a management study of the Long Island Sound, whose waters they share. A similar cooperative program, focusing on New York/New Jersey Harbor, has been developed by New York and New Jersey, with the participation of other stakeholders. The urbanization of the Tri-State region has severely impacted these harbor-estuary waterways and directly contributed to the loss of wetland resources and other sensitive habitats. In addition, land use changes in coastal and upstate regions of these watersheds have resulted in increased nonpoint source pollution loadings.

The contributions of nutrients, such as nitrogen, have been of immediate concern. In addition to nutrients, however, extensive monitoring and analysis has shown that nonpoint source loads to tributaries account for a significant proportion of the organic enrichment, suspended solids, and metals in these estuarine systems. The City is participating in the development of management plans for these estuaries that, through the implementation of innovative strategies, will prevent, and ultimately reduce, pollution loadings. These strategies will use as a starting point ongoing nonpoint source control efforts, including erosion and sediment controls and stricter emission controls under the Clean Air Act. By contrast, costly technological approaches, such as reconstructing wastewater treatment plants, can be financially wasteful and environmentally unsound.

COMMENTS REGARDING S. 1114's WATERSHED PLANNING AND NONPOINT POLLUTION CONTROL PROVISIONS

New York City strongly endorses S. 1114's emphasis on watershed planning and management controlling nonpoint source pollution.

- To be truly effective, the Act's watershed planning provisions should set forth a process that emphasizes site-specific management strategies and enables maximum organizational flexibility. We must encourage local initiative and beware of processes that simply repackaged current water pollution control policies and procedures under a more attractive name or that turn watershed planning into an additional bureaucratic process and leave the Act's current point source biases in place. If we fail to be bold and innovative, decisions will continue to be made in a rigid, top-down manner and opportunities for truly effective collaborations, based on mutual interests, will be lost. In addition, consistent with site-specific watershed planning, the Act should allow flexibility in the attainment of water quality standards. In some instances, for example, ten years may be too little time; in others, too much time.
- We support S. 1114's mix of economic incentives with enforcement mechanisms, i.e., linking grant and loan eligibility to the development of plans and requiring the use of BMPs when plans are not approved. We believe the combination of nonregulatory with regulatory approaches is yielding the most effective results in New York City's watershed protection efforts and should be followed, to the extent possible, on the national level.
- As the recent outbreak of cryptosporidiosis in Milwaukee demonstrated—an outbreak that affected hundreds of thousands—the need to protect the Nation's drinking water supplies cannot be overstated. Although more stringent drinking water regulations have emerged in response to public health concerns about toxics and microbial pathogens, the Clean Water Act's policies have failed to keep pace. One of the most pressing challenges facing the Congress, therefore, is to harmonize the Clean Water Act's and the Safe Drinking Water Act's policies. This priority should be described in the Act's statement of goals and policies and should be reflected much more strongly throughout the Act's policy provisions, especially in the water quality criteria and standards, anti-degradation and outstanding national resource water provisions. In particular, the Act should require the implementation of stringent water quality controls that ensure levels of protection for drinking water supplies that are consistent with the Safe Drinking Water Act's policies, special protection for unfiltered drinking water supplies, and the development of standards for microbial pathogens of recognized public health concern, where such standards have not already been developed.

- Watershed management should be aimed not simply at the attainment of water quality standards in the water column but at use impairments and the development of strategies that will protect and restore whole ecosystems, including wetlands and coastal habitats. The Act must pay much more attention to land-water interaction, to littoral zone preservation, and to expanding public access to our Nation's waters.
- Comprehensive basin wide management requires an understanding of the full spectrum of water quality impairments—point, stormwater, and nonpoint alike—and how they interact. It should be a tool that leads to regulatory and policy simplification and prioritization. In its current form, S. 1114 would seem to create a discrete set of watershed protection requirements that will not necessarily take account of separate but related water quality activities. For example, it is not clear how, if at all, harbor-estuary programs developed pursuant to section 320 would be linked with watershed planning activities.
- The Act should provide enough flexibility to enable watershed decision making that can direct resources where they will yield the greatest return, whether on anti-degradation measures to protect pristine waters or on pollution controls for waters with the greatest use impairments.
- Effective control of nonpoint source pollution requires a greater understanding of nonpoint sources. A serious, federally-assisted research effort is needed in order to improve nonpoint source monitoring techniques and to develop reliable, accurate methods of predicting the effectiveness of various nonpoint source management techniques.
- New York City strongly supports maximizing linkages and coordination between the Clean Water Act and related federal statutes, including the Coastal Zone' Management Act, the Intermodal Surface Transportation Efficiency Act, Soil and Conservation and Domestic Allotment Act, the Food Security Act of 1985, the Clean Air Act and, as stated above, the Safe Drinking Water Act.
- The eligibility of Animal Waste Facilities for Title VI funds for planning and construction is a welcome amendment to section 319 programs. New York City's experience with its watershed farmers is proving that animal waste management, particularly for dairy cattle manure, is an essential element in nutrient management and pathogen control to protect the integrity of the City's drinking water supplies. This provision should be broadened to include funding for multi-farm, or watershed-wide animal waste handling facilities and programs, including regional composting, which in many instances may be more efficient, cost effective, and less labor intensive for individual farmers than on-farm waste management.
- The proper maintenance and operation of individual subsurface disposal systems is crucial to the overall control of nonpoint source pollutant contributions to surface drinking waters supplies, such as New York's. Particularly in economically distressed rural communities, but also in older town centers and more urbanized areas of our watershed, we've found that failed and poorly maintained septic systems are a major threat to water quality. These communities need technical, administrative and financial assistance in establishing septic maintenance districts and remediation programs. The amendment to section 319 relating to Subsurface Sewage Disposal is long overdue. New York City strongly supports federal assistance to watershed communities, particularly in the form of low interest loans and grants, in establishing and implementing subsurface sewage disposal organizations.
- The Act should expand on the progress that has been made under the National Estuary Plan of 1987. New York City urges Congress to support the important regional and local estuary planning efforts now in development. Efforts under section 320 should receive funding for implementation, and provision should be made to extend the duration and funding of those programs where more complex estuarine systems are being studied, such as the Long Island Sound Study (LISS) and the New York New Jersey Harbor Estuary Program (NYNJHEP).

OTHER PRIORITY ISSUES

A) Funding

The high costs of meeting the nation's unmet wastewater treatment needs is well documented. The City urges Congress to support and expand funding of the State Revolving Loan Fund to enable a wider variety of activities essential to meeting the Act's clean water goals. A minimum of \$5 billion in funds should be available to fund any and all activities required for compliance with the Clean Water Act's requirements, including nonpoint source controls, combined sewer overflow programs, nutrient removal, comprehensive watershed protection, wetland protection, water

pollution control facilities upgrading, and water conservation. It is also essential that funding be provided for basic scientific research and to support local programs to minimize pollution discharges and control floatables. It is also finally time to expand the Land and Water Conservation Fund and other programs to enable the acquisition of environmentally-sensitive lands.

Unfunded federal water mandates have caused rate shocks in municipalities across the Nation. Rate shocks hurt low income consumers most severely. Since 1986 alone, New York City's rates have increased over 200 percent. We applaud S. 1114's attempt to address this issue but urge the Congress to provide grants for municipalities with high wastewater needs in addition to SRF loans. By stimulating the economy, grants would provide economic as well as environmental benefit.

B) Combined Sewer Overflow Control

New York City supports an approach to combined sewer overflow (CSO) and stormwater control that, reflecting current thinking about watershed planning, is based on site-specific water quality targets, rather than uniform technology requirements. It is essential that local governments be provided the flexibility to achieve water quality, best use classifications, and actual waste load allocations. We believe that the EPA's draft CSO Control Policy, which is the indirect product of negotiations among a wide range of interested parties, will enable such flexibility and should not be disturbed by the reauthorization process.

C) Wetlands Protection

Wetlands protection is an essential element of comprehensive water quality management. To protect the nation's imperiled wetlands, at a minimum, Section 404 of the Act should be broadened to incorporate a "no net loss to wetlands" policy and the activities regulated must be expanded to include drainage, channelization, excavation, and activities that impair the flow, extent, and circulation of the nation's waters. In the case of freshwater wetlands, the quality of the City's drinking water is closely linked to the biological purification actions of these natural systems. If they are degraded or destroyed, the drinking water of nine million will be jeopardized.

Mr. Chairman, thank you for the opportunity to testify before the Subcommittee today. I would be pleased to answer any questions.

TESTIMONY OF GEOFFREY GRUBBS, DIRECTOR, ASSESSMENT AND WATERSHED PROTECTION DIVISION, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee. I am Geoffrey Grubbs, Director, Assessment and Watershed

Protection Division of the Office of Water at the United States Environmental Protection Agency (EPA). Thank you for the opportunity to testify on one of the most important water quality challenges facing all of us—management of nonpoint sources including polluted runoff. As Carol Browner noted in her recent testimony before this Subcommittee, if we collectively assure better nonpoint source management through a reauthorized Clean Water Act (CWA), the legislation will be a success.

First, let me note that many aspects of the CWA and of S. 1114 relate directly or indirectly to nonpoint source management. Funding, watershed planning, pollution prevention, and stormwater controls are all relevant here, and we should take care that approaches in these related areas complement and reinforce any new nonpoint source directions. I will provide more information on this later in my testimony.

I will first provide a little background on the nonpoint source problem. EPA and the State water quality agencies are proud of the fact that most of our rivers, lakes, and estuaries are now meeting their environmental objectives. In April 1992, States reported to EPA on the quality of this country's vast waterways. In the two years preceding their reports, States were able to assess nearly 774 thousand miles of rivers and streams, over 18 million acres of lakes, and over 27 thousand square miles of estuaries. The States indicate that two-thirds of these rivers, streams and estuaries and over half of these lakes meet State water quality standards and designated uses.

Nevertheless, our remaining problems are quite extensive. Of the assessed waters, States report that over 258 thousand miles of rivers and streams, nearly 8 million acres of lakes, and over 9 thousand square miles of estuaries do not meet water quality standards or their designated uses.

While point source discharges continue to cause problems in some areas, nonpoint source pollution including polluted runoff remains the dominant water quality and environmental concern in most areas. For the last decade, States and others have consistently reported that nonpoint source pollution is the main reason that water quality objectives are not met. In their 1992 reports to EPA, States once again confirmed that nonpoint sources are causing extensive water quality problems. States list agriculture, urban runoff and stormwater, resource extraction, hydrologic modifications, and contaminated sediments among the sources most widely contributing to water quality impairments nationwide. Depending on local conditions and economic activity, other nonpoint sources—such as land disposal (including on-site wastewater systems), forest harvesting, and small construction sites—can also be significant contributors to water quality problems. The leading causes of impairment related to nonpoint sources are siltation, nutrients, and organic enrichment.

States have reported that the most widespread nonpoint source category of concern is agriculture, which adversely affects about two-thirds of all impaired river miles. Similarly, agriculture contributes to about one-half of all impaired lake acres reported by the States. The United States Department of Agriculture's (USDA's) second Resource Conservation Act appraisal of conditions and trends on non-federal lands reported that agricultural nonpoint sources of pollution are degrading water quality in about 10 percent of all streams. Many studies have documented that agricultural nonpoint source pollution also affects ground water. For example, high nitrate concentrations from agricultural areas have been detected in the ground water of the Central Great Plains, the cornbelt, the Palouse and Columbia River basins, as well as parts of Montana, Arizona, Pennsylvania, Maryland and Delaware.

Urban and stormwater runoff, including certain construction and development activities and on-site disposal systems, contributes conventional and toxic pollutants to our waters.¹ This runoff is the leading water quality problem in estuarine waters, affecting over two-fifths of impaired estuary square miles according to State 1992 Section 305(b) reports. The National Oceanic and Atmospheric Administration (NOAA) has documented that well over 1.5 million acres of Gulf, East and West coast waters are limited for shellfish harvesting due to urban runoff. EPA and the States have begun efforts to control stormwater from larger cities and industrial activities (including major construction projects) through the National Pollutant Discharge Elimination System (NPDES) permit program of the CWA. Runoff from smaller urban areas and commercial, retail, and light industrial facilities is currently managed as a nonpoint source, but these sources are scheduled to become subject to NPDES permit requirements in October 1994. As described in EPA's earlier testimony, we support an approach similar to that set forth in S. 1114 that would move these sources over to a strengthened nonpoint source program indefinitely.

Beyond urban and agricultural runoff, States have reported significant impacts from other nonpoint source categories. For example, four States—Washington, Tennessee, Idaho, and North Dakota—list hydrologic and habitat modification as accounting for more than 20 percent of the nonpoint source impacts to their rivers and streams. Another 22 States reported lesser but still significant impacts from hydromodification. Seventeen States said forestry (silviculture) contributes to their nonpoint source problems in rivers.

Not only the chemical, but also the physical and biological components of aquatic ecosystems, are important to maintaining the integrity of our Nation's waters. For example, urbanization and development can severely alter the natural vegetation and infiltration characteristics of watersheds and their wetlands, causing higher and more frequent runoff with subsequent downstream erosion, riparian alterations and destruction of habitats. Rivers and streams are increasingly affected by temperature stress, caused primarily by loss of streamside vegetation that provides shade, and by channelization and hydromodifications (e.g., dams and flow alteration).

States have made progress in nonpoint source management since the addition of Section 319 in the 1987 Clean Water Act amendments. All States have developed and started implementing Section 319 nonpoint source management programs. Since FY 1990, EPA has provided about \$190 million in Section 319 funds to help States with their nonpoint source management activities. State efforts have led to increased public awareness of nonpoint source pollution including polluted runoff and ways to manage the problem sources. State 319 programs have demonstrated

¹ Combined sewer overflows (CSOs) discharge pollutants from raw domestic sewage, industrial and commercial wastes, and storm water runoff. CSOs contribute to water pollution problems in older cities (primarily in the Northeast and Great Lakes) where such combined sewer systems still exist. EPA's draft strategy for CSO controls was discussed at an earlier hearing in the Subcommittee's review of Clean Water Act reauthorization issues.

the effectiveness of a variety of innovative management practices, established viable institutional arrangements, and implemented some watershed projects. States have also worked with other federal agencies to better use the existing array of natural resource programs to support nonpoint source management. Support from the USDA, the U.S. Department of Interior (DOI) and NOAA has helped EPA do its job, buttressed State nonpoint source programs, and led to many localized watershed improvements.

In addition, the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA) provided a strong mandate to address nonpoint sources in coastal areas. Twenty-nine coastal States and Territories are developing coastal nonpoint pollution control programs for approval by NOAA and EPA. These programs will substantially reduce polluted runoff associated with agriculture, forestry, urban activities, marinas, and hydromodification through the application of best available management measures that are economically achievable. State-adopted and locally appropriate management measures must conform to the national nonpoint source guidance published by EPA after close collaboration with other federal agencies and States, and consultation with the potentially affected sources and the public. These new State coastal nonpoint programs will also provide for the implementation of additional measures as necessary to attain and maintain water quality standards and designated uses. The coastal nonpoint programs represent an important forward step in controlling nonpoint source problems.

Yet, despite progress under Section 319 and the promise of CZARA, the problems of nonpoint source-related impairments are so widespread that State programs must advance even further. Existing State programs under Section 319, while generally providing a good, basic framework, need to be upgraded. While EPA and States are working to improve Section 319 implementation, stronger authority is needed if we are to make the progress required. We believe that the following principles should guide reauthorization in this area:

- provide a stronger watershed framework;
- continue to focus on voluntary, targeted approaches, but supplemented by backup enforceable requirements to be triggered when necessary;
- establish clearer performance expectations and technical baselines;
- focus water quality programs on aquatic ecosystem protection, not just on the water column;
- stress pollution prevention; and,
- work with other federal agencies to provide for implementation through their stewardship of federal lands.

I would like to discuss the Administration's view on possible approaches to these challenges, including general areas of agreement with S. 1114 and a number of ideas for improving its effectiveness.

STRENGTHENING STATE PROGRAMS

Section 319 gives States the leadership role in controlling nonpoint sources, including significant flexibility to devise and carry out their own nonpoint source management programs. Given the differing and localized nature of nonpoint source problems, this flexibility appropriately provides for nonpoint source programs to vary across the country according to local needs. States have used this flexibility to focus on their specific priority problems, targeting and tailoring their projects and available Section 319 funds to complement other State and federal funding and authorities.

However, with initial State nonpoint source programs in place, it is apparent that the differences in State programs go beyond those justified by local conditions. For example, States do not share an understanding of the baseline management measures that are available, and there is no generally agreed upon schedule to guide State progress. There is no basis in Section 319 for gauging the success of State nonpoint source programs nor for EPA to step in where States fail to act, no matter how severe the water quality problem may be. While most States are implementing several nonpoint source watershed demonstration projects, adoption of nonpoint source controls is not nearly as widespread as needed to reduce the extensive water quality problems States report as resulting from nonpoint sources. EPA continues to believe that voluntary approaches should be reinforced and relied upon as the strategy of first choice, but the current Section 319 gives us no mechanism to assure success where voluntary efforts fail.

Section 319 should be amended to bolster State nonpoint source programs in concert with a watershed protection approach. As part of a watershed protection approach, States should specifically identify those waterbodies and their watersheds

that are impaired or threatened by nonpoint sources. In this respect, we agree with S. 1114 that existing State assessments should be updated and should include delineations of the contributing watersheds, although we would add that these assessments should also cover threatened waters and include major relevant stresses on ecosystems in addition to chemical pollutants. To reduce State paperwork burdens and duplication, these assessments should also be consolidated with existing inventory requirements under CWA Sections 305(b), 303(d) and 314(a). Where States comprehensively inventory their watersheds and undertake strong, broad programs to expeditiously address the stresses in the highest priority areas, we would support deference to that program. States could thereby adopt their own nonpoint source management measures for the sources and pollutants causing problems on a local basis as part of a comprehensive watershed approach. However, not all States are ready to adopt this approach.

In impaired or threatened areas where States do not opt for a watershed approach, existing nonpoint source management programs should be upgraded to implement best available management measures for categories of nonpoint sources causing or contributing to water quality impairments (or threatening such impairments). These State measures should be based upon EPA national minimum program and management measure guidance, which in turn should consider costs and the pollution reductions achieved and encourage pollution prevention wherever appropriate. The guidance should be broad and flexible enough to allow for appropriate local tailoring. States should also be allowed to adopt alternative management measures if they can demonstrate that the alternative is as effective as the measure in national guidance.

Additional protection beyond impaired and threatened waters is necessary as well to make sure that water quality standards (including designated uses) are maintained. We therefore favor the application of best available management measures to all new nonpoint sources except in areas where a State has developed a watershed program.

We agree with S. 1114 that some flexibility is appropriate for site-level implementation of national nonpoint source management measures and we support site-specific plans, developed and approved by a qualified federal or State agency, and designed to manage nonpoint pollution, as an appropriate alternative. However, we are concerned about deferring in all cases to existing agricultural conservation compliance plans as S. 1114 does, since these plans are intended to address soil loss, not water quality. Where the water quality impairment relates to nutrients or pesticides, these pollutants must be addressed in site-specific plans, and conservation compliance plans may not fully suffice. These site specific plans, required to be fully implemented by 1995 for all farms with highly-erodible lands, could be augmented when considered in concert with certain existing programs that do address the specific pollutants and land areas affecting water quality. Such programs could include the Conservation Reserve Program established under the 1985 Farm Bill, and the water quality incentive program established under the 1990 Farm Bill, and State coastal nonpoint programs approved by NOAA and EPA under CZARA, as well as conservation compliance plans.

In implementing best available management measures, we agree with S. 1114's general philosophy that States should rely initially on an appropriate mix of voluntary and regulatory approaches. However, upgraded State programs should also include compulsory mechanisms, including enforcement authorities, to be triggered if, within a reasonable time, voluntary means fail to result in implementation of the management measures.

S. 1114 envisions a twelve and one-half year time frame for implementing enhanced nonpoint source controls: thirty months for new State programs plus two five-year cycles for implementation. We think this two-cycle approach and time frame is reasonable, but that the requirements should be phased in based on a State-developed schedule. However, we note that the second cycle of the program (in years eight through twelve) does not provide for additional steps which might still be necessary to meet water quality standards in impaired waters despite the application of the management measures described in national guidance. The second cycle of State nonpoint source programs should provide for additional State management measures as necessary to meet water quality standards and designated uses.

We support S. 1114's provision for withholding Section 319 grants from States that do not adopt revised, approvable nonpoint source management programs. We also support the provision in S. 1114 which would authorize the EPA Administrator to establish enforceable minimum nonpoint source controls where a State has failed to develop an approvable program.

FUNDING AND FINANCING

EPA estimates that the total capital cost nationally to implement nonpoint source management measures for agriculture and forestry would be about \$8.8 billion over the next 20 years. (We have not yet estimated the capital costs for the more targeted approach we are supporting today, but the cost should be lower.) Operation and maintenance costs have not been estimated, nor have needs for such nonpoint sources as hydromodification or stormwater runoff from small communities and light industry, which are expected to be significant.

The benefits of nonpoint source pollution control appear to be significant. In 1985, the Conservation Foundation estimated in-stream damages from cropland erosion to be \$2.5 billion annually and total in- and off-stream damages to be \$3.5 billion annually (this estimate does not include damage to water quality from animal waste, fertilizer, pesticides, grazing, irrigation or non-agricultural nonpoint sources). A variety of other studies corroborate that the benefits of nonpoint source pollution control would significantly exceed its costs.

Since FY 1990, Congress has appropriated approximately \$190 million in Section 319 funds to assist State nonpoint source programs. These funds are being used by States and Indian Tribes to carry out their programs and do provide direct support for implementing nonpoint source controls in priority watersheds. Several other EPA programs provide limited funding to assist nonpoint source implementation, including the Clean Lakes Program, the National Estuaries Programs, and the Great Lakes and Chesapeake Bay programs.

Other federal agencies provide significant financial and technical support for activities that help reduce nonpoint source pollution problems. For example, as a result of the 1985 and 1990 Farm bills, approximately 1.5 million Conservation Compliance Plans covering 140 million acres are being developed by USDA to reduce soil loss; such plans are now fully implemented on 78 million acres. Similarly, the Conservation Reserve Program implemented by USDA has resulted in removing from production 36.5 million acres of cropland that pose particular threats of soil erosion, while the Wetlands Reserve program has signed up 50,000 wetlands acres whose retention can significantly improve water quality. Also, annually the Agricultural Conservation Program provides cost share assistance to producers to install improved management practices. In 1992, some 9.5 million acres were affected.

The mandates of the CWA must be realistic in light of the resources we can reasonably expect to be available to federal, State and local governments and the private sector. For this reason, we support careful targeting of funds to priority watersheds and impaired and threatened waters. At the same time, States and federal agencies will need to continually evaluate their assistance approaches to ensure that limited resources are used in the most cost-effective manner possible.

However, even with targeting and streamlined approaches, we believe additional resources will be needed at the federal, State, and local levels to fully address the considerable national nonpoint source pollution control needs. Current Section 319 appropriation levels are providing States and Indian Tribes with base program assistance but are not adequately supporting nonpoint source watershed implementation projects. Therefore, in addition to the \$50 million per year currently being appropriated for nonpoint source grants, the President is proposing to invest an additional \$180 million in nonpoint source grants from FY 1994 through FY 1997.

The current one-third of one percent CWA cap on Section 319 grants to Indian Tribes (resulting in a total of \$165,000 in FY 1993) is hindering our ability to assist Tribes in developing and implementing their nonpoint source programs; we support raising this limitation.

We note that S. 1114 would eliminate the provision for EPA to consider groundwater protection activities such as planning, assessments, and technical assistance when awarding Section 319 grants to States. It is important to avoid transferring problems from surface to ground water and to protect ground water from nonpoint source pollution. We believe the existing provision has worked well, allowing States to foster nonpoint source related priority ground-water activities. We would favor keeping this existing provision.

Under the CWA, nearly \$9 billion has been appropriated to date for State revolving loan funds. In addition to supporting construction of wastewater facilities, these funds may be used for loans to individuals or municipalities to implement nonpoint source controls consistent with a State's Section 319 nonpoint source management program. However, to date, only a very limited amount of these funds have been used to address nonpoint sources.

We support retaining the existing revolving fund eligibility for nonpoint sources for projects whose principal purpose is protecting and improving water quality to

encourage States to use these funds to support their priority nonpoint source projects. Also, as more States begin using their revolving funds for nonpoint sources, other public entities not traditionally involved in providing municipal pollution control will necessarily need to participate in this loan program. We should explicitly recognize these entities, including Conservation Districts.

FEDERAL LANDS AND ACTIVITIES

Over 29% of the land in the United States, 701 million acres, is public land, administered by the U.S. government for various purposes through the Bureau of Land Management, the Forest Service, the Park Service, the Fish and Wildlife Service, the Department of Defense, and other federal agencies. In addition, many federal agencies, such as the Federal Energy Regulatory Commission, the Army Corps of Engineers, the Bureau of Reclamation, the Bureau of Land Management and the Forest Service issue licenses and permits and fund or conduct activities that can, if conducted improperly, result in nonpoint source pollution.

As good stewards, the federal land managers and decision makers should ensure that federal lands and activities are properly managed to substantially reduce nonpoint source pollution. In particular, federal lands contain many of our most sensitive waters (e.g., cold-water fisheries, habitat for threatened and endangered species, etc.), serve as watersheds for drinking water supplies, and contain high-quality and outstanding resource waters.

We believe the current consistency provision in Section 319 should be strengthened by requiring States to identify, for their priority watersheds or their threatened and impaired waters, the federal lands and federal activities that are inconsistent with the State nonpoint source management programs. Federal departments and agencies should achieve consistency with State programs in these areas to the same extent as non-federal entities are required to do. As a minimum, federal agencies should comply with management measures in watersheds to the same extent as non-federal entities in those watersheds. However, we also believe that the President should have the ability in individual cases to waive these requirements if the President determines it to be in the paramount interest of the United States to provide an exemption.

CONCLUSION

Polluted runoff poses a challenge that federal agencies, States, local governments, and the private sector must meet if we are ever to realize the full promise of the CWA. The problems are different and more subtle than those of the past, but they are not insurmountable. Public education, clear definition of good practices, and a commitment by State and federal agencies to water quality values will carry us a long way. We thank Senators Baucus and Chafee for the thoughtful approach reflected in S. 1114 and we hope our suggestions will help to strengthen that approach while remaining generally compatible with it.

I will be happy to answer any questions that you and other members of the subcommittee may have.

TESTIMONY OF DIANE M. CAMERON, NATURAL RESOURCES DEFENSE COUNCIL

I. Summary

Poison runoff impairs more waterbodies, surface and ground, urban and rural, than any other pollution source in the country. Poison runoff is the contaminated stormwater and snowmelt that runs off of, or leaches through, land used and abused for human purposes without regard to ecological needs. Although the dominance of poison runoff ("nonpoint source water pollution") as a water quality problem is widely acknowledged, (and was known even before 1972), in general we have failed to create and implement effective programs that protect and restore our nation's waters that are subject to this threat.

The framers of the 1972 Clean Water Act explicitly recognized the need for State water quality programs to address land-based sources of water pollution in their water quality assessments and in their watershed management plans developed under section 208 of the Act ("208 Plans"). The dominance of the "point source challenge," however, eclipsed public awareness of, and government attention to, more diffuse pollution sources.

By the mid 1980s, impatient with the lack of EPA and State progress in controlling poison runoff, Congress created the "State Nonpoint Source Management Pro-

gram" (§ 319). Unfortunately, the State 319 programs have been plagued by slow and inadequate funding, lack of adequate implementing mechanisms, and insufficient direction and oversight from EPA. The 1987 CWA Amendments also included requirements for the municipal and industrial stormwater permits; these permitting programs are now helping to revive public interest in restoring blighted urban watersheds into oases of life. In 1990, Congress passed a new program, aimed at reducing poison runoff in coastal watersheds, with a more ambitious pollution reduction mandate and more regulatory clout than the 319 program. The "Coastal Zone Nonpoint Source Pollution Control Program" may be a model for revisions to State runoff and watershed management programs that will help to reduce and prevent poison runoff.

To underscore the severity of the poison runoff problem, and to explain it to the uninitiated, we begin this section with a poison runoff primer. Next, we evaluate the implementation and efficacy of Clean Water Act poison runoff programs that existed before 1987, as well as the two major initiatives passed in 1987 (§ 319) and in 1990 (the Coastal Zone Management Act). We then apply these various findings about the history of efforts to control runoff in our brief analysis of Title III of S. 1114.

Finally, in relation to the whole-watershed approach within Title III of S. 1114 and in anticipation of the upcoming hearing on watershed planning, we describe the challenges that face urban leaders seeking to restore inner city waters to places of recreation and refreshment, and to provide meaningful jobs in the process of healing urban waters.

II. Introduction to the Problem of Polluted Runoff and Watershed Restoration

A. A Primer on Poison Runoff

Poison Runoff Problems Were Brought Here by the Pilgrims

Poison runoff is not a new phenomenon; in fact, it has been with us since the first settlers clear-cut the New England forests, and since the first farmers began plowing the fertile lands of the Eastern Coastal Plain. Reflecting a lack of understanding of history, the official rhetoric has often apologized for the severe lack of money, staff resources, and regulatory clout devoted to poison runoff reduction by claiming that this is a new or obscure pollution source. For example, EPA's Final Report to Congress on Section 319 of the Clean Water Act states,

"Nonpoint source impacts have not been fully assessed. The Nation has focused largely on impacts caused by traditional point sources (POTWs and industrial dischargers) in the past because point source discharges were causing major, visible problems in our surface waters. Thus, very little attention has been given to assessing the impacts of NPSs. Since water quality impacts still exist in many areas, it is now very clear that NPSs have had and continue to have widespread impacts upon surface waters."¹

Contrary to this assertion, land-based, diffuse pollution sources and the severity of damage they caused were well-known to the framers of the original Clean Water Act. The 1972 Senate Report said:

"One of the most significant aspects of this year's hearings on the pending legislation was the information presented on the degree to which nonpoint sources contribute to water pollution. Agricultural runoff, animal wastes, soil erosion, fertilizers, pesticides and other farm chemicals that are a part of runoff, construction runoff and siltation from mines and acid mine drainage are major contributors to the Nation's water pollution problem. Little has been done to control this major source of pollution. . . . It has become clearly established that the waters of the Nation cannot be restored and their quality maintained unless the very complex and difficult problem of nonpoint sources is addressed. . . . The Committee recognizes, at the outset, that many nonpoint sources of pollution are beyond present technology of control. However, there are many programs that can be applied to each of the categories of nonpoint sources and the Committee expects that these controls will be applied as soon as possible."²

Unfortunately, it would be over two decades before any land use category-specific water quality controls were required as part of a federal program—the Coastal Zone Nonpoint Source Pollution control Program—which we will discuss below. In the intervening years, poison runoff continued unabated.

National Statistics Show That Poison Runoff Damages Are Widespread

Two water quality assessment programs required by the CWA include poison runoff: the biennial 305(b) reports, and the onetime 319(a) reports. The 305(b) re-

ports are supposed to cover all waterbodies and all relevant pollution sources in each State; the 319(a) reports are supposed to be statewide assessments of runoff problems, conducted wherever possible on a watershed-by-watershed basis. There is some overlap between these two reports.

The 305(b) water quality assessments are difficult to compile for a time-series analysis of trends, since the scope and methodologies for reporting have changed so frequently. And these reports likely underestimate the magnitude of the poison runoff problem even more than for other sources of pollution because, as discussed below, poison runoff is even more dominated by physical and biological (as opposed to chemical) impairment. The most complete, and thus the most revealing, 305(b) reports on runoff problems were from the most recent (1988-1989) reporting cycle compiled by EPA.

EPA in 1991 published a compendium of the States' 319(a) assessments, entitled *Managing Nonpoint Source Pollution*, as required by § 319(m). This report also contains a comprehensive set of statistics on the role of land-based sources in damaging aquatic resources nationwide. Below we summarize the damage assessment from this report as well as from the 1988-1989 305(b) compilation (The National Water Quality Inventory).

Rivers: Over 100,000 assessed river miles are impaired or threatened by agricultural runoff nationwide. Over 15,000 more assessed river miles are impaired by logging; and almost 10,000 assessed river miles are impaired by construction runoff. About 40,000 river miles were listed in the 319(a) reports as threatened by runoff pollution sources.

Lakes: Almost 2 million acres of U.S. lakes are impaired by agricultural runoff sources. Storm sewers impair almost another million acres.

Great Lakes: All affected Great Lakes areas of Indiana (Lake Michigan) and New York (Lakes Erie and Ontario) do not support designated uses (wildlife-Indiana), (fisheries-New York), attributed in large part to poison runoff sources. (No other Great Lake State provided quantitative assessments of runoff impacts to the Great Lakes.)

Wetlands: About 52,000 acres of wetlands in California, Iowa, and Delaware are not supporting one or more designated uses, or are threatened due to poison runoff sources. (No other States gave quantitative information on wetlands damage from runoff sources.)

Coastal Waters: 1.2 million acres of coastal waters are not fully supporting one or more designated uses due to poison runoff.

Estuaries: About 5,000 square miles of estuarine waters are impaired or threatened by runoff sources.

Groundwater: Public drinking water supplies are threatened by runoff sources in the four States that specified impacts to designated uses.³ Nitrates in groundwater exceed current health standards in virtually all States and occur in 5 to 20 percent of sampled wells in the Western Corn Belt and Mid-Atlantic States, largely due to fertilizer applications on farms.⁴

The runoff management and waterbody assessment programs are not the only source of national statistics on runoff damage. In June, 1989, under § 304(l) discussed above, EPA released a list of over 17,000 "toxic hotspots"—seriously degraded waterbodies. Only 602, or less than 4 percent, were impaired "wholly or substantially" by factories or sewage treatment plants. The rest were polluted, wholly or substantially, by poison runoff from farms and other sources.⁵

B. *The Nature of Poison Runoff Varies by Land Use Category. But Water Quality Damage Tends to Be Systemic. Part of "Business As Usual"*

Virtually every human activity on the land has the potential to impair water quality and aquatic habitat. It is beyond the scope of this report to describe every land use category in detail; we will, however, highlight the most significant categories that do the most damage nationwide: Agriculture (including cropping, confined animal operations and grazing); mining; urban development and logging.

Agriculture Dominates as the Number One Source of Aquatic Impairment, But Farming Practices that Save Money, Protect Water Quality Are Available

Agriculture is the leading source of water pollution in the United States, according to EPA.⁶ Agriculture was cited by EPA as the leading source of pollutants causing or contributing to "toxic hotspots" in its June 1989 release of the list of 17,000 hotspots nationwide.⁷ The latest National Water Quality Inventory (1988-1989) reported that agriculture was far-and-away the largest source of river impairment, serving as a contributing source in over 60% of impaired river miles. For perspec-

tive, the next biggest reported source—municipal sewage plant discharges—contributed to 16.4% of impaired river miles.)⁸

Agriculture is also a leading cause of species endangerment and extinction. About 37% of the 436 species listed in the Endangered Species Information System data base are imperiled at least in part by irrigation and the use of pesticides. An unpublished EPA staff report from November 1989, based on data from the Department of the Interior, identified 125 endangered or threatened species that are aquatic or water-dependent and are impacted by agricultural practices such as pesticide usage.⁹

Agricultural activities were also fingered as a major cause of fish kills. Three out of the top six pollutant categories cited as causing fish kills, low dissolved oxygen, pesticides, and fertilizers, are wholly or substantially from agricultural uses (the other three are petroleum, pH/acidity and organic chemicals). However, agriculture accounted for only 5% of the total number of fish killed from 1977 and 1985, because the size of each fish kill was relatively small. In EPA's 1986-87 summary of State reports on fish kills, animal feedlot/waste operations were blamed for over 1 million fish killed (most likely due to oxygen starvation from manure pollution).¹⁰ In a separate 1984 survey of fish kill data, pesticides were cited as the leading documented cause of fish kills in the U.S. over the previous two decades.¹¹

Because agriculture is by far the biggest source of waterbody impairment nationwide, and because it is such a diverse industry, it is necessary to sub-categorize the industry in order to explain regional differences in the types of impairments observed.

Croplands

Soil erosion, pesticide pollution, nitrates leaching into groundwater, nitrogen and phosphorus runoff into estuaries, wetlands conversion, streambank wastage, and manure runoff are all major problems associated with crop production. Irrigated crop production can be associated with all of these water quality problems, plus the discharge of toxic mineral salts into estuaries and marshlands. Below we give some national and regional data on water pollution from crop production.

Soil erosion data has only been collected on the national level since 1977. The National Resources Inventory, taken roughly every five years by the Soil Conservation Service, includes reports for 1977, 1982, and 1987.

The 1982 and 1987 reports are more reliable than the 1977 reports. Total U.S. soil erosion estimates from sheet and rill (water-borne) erosion from cropland show a decline from roughly 1.8 billion tons of sheet and rill erosion in 1982 to about 1.6 billion tons eroded in 1987—a decline of about 11 percent.

Among the trends in crop production accounting for the decline are the onset of the 1985 Farm Bill conservation program, including the conservation reserve and conservation compliance programs. While a direct connection between soil erosion and water quality cannot be made, in general, the more soil is conserved, the more our waters are protected from sediment pollution. The job of keeping soil on the land is far from over, however. Despite this apparent reduction in erosion losses, sediment and siltation from agriculture and other land uses remains the top water pollution problem in the country.

Pesticides pollute both surface and groundwater. Fish kills from pesticides were discussed above. Overall pesticide use statistics are startling, and give an indication of the magnitude of the potential pesticide problem for water quality. EPA has estimated that approximately 600 active ingredients are marketed in 45,000 to 50,000 formulations. About 430 million pounds of pesticides were applied agriculturally in 1987, with a market value of about \$4.0 billion.¹² According to EPA's compilation of the States' 1988/89 305(b) reports, pesticides impaired 11.2% of all assessed river miles and 14.5% of Great Lake shore miles. (Pesticide impairment of lakes was not assessed, or not reported in this compilation.)¹³

A recent USGS study of ten current-use *herbicides* in surface waters of the Midwest found that high concentrations of herbicides were flushed from cropland and were transported through surface waters as pulses in response to late spring and early summer rainstorms.¹⁴ Several of the herbicides exceeded the EPA water quality criterion for drinking water-human health protection in a significant percentage of the samples. For example, 52% of the sites exceeded the primary drinking water standard for atrazine (3 ug/L); 32% exceeded the WQC for alachlor (2 ug/L); and seven percent for simazine (1 ug/L). The median concentrations of the four major herbicides, atrazine, alachlor, cyanazine, and metolachlor, jumped by a factor of ten in the late spring-early summer samples, and then dropped back to near preplanting levels by harvest time. The study sampled 149 sites in 122 river basins of Ohio, Indiana, Illinois, Wisconsin, Minnesota, Iowa, Kentucky, South Dakota, Kansas, Ne-

braska and Missouri.¹⁵ The fact that over half of these midwestern surface water sites exceeded the atrazine drinking water standard, and a third exceeded the alachlor drinking water standard, is a concern for all communities that rely upon these waters as drinking water supplies, and particularly for those small rural towns that do not use advanced drinking water treatment such as carbon filtration.

The *nutrients phosphorus and nitrogen* are important water pollutants from agricultural operations including manure spreading and artificial fertilizer applications. Phosphorus in high levels is acutely toxic to fish; in much lower levels it over-enriches waterbodies, causing them to fill up with algae ("eutrophication"). Nitrogen, especially in the form of nitrate, is a human health and livestock health concern (EPA's drinking water standard for nitrate is 10 mg/L) because it causes "blue baby syndrome" (methemoglobinemia). Like phosphorus, nitrogen also contributes to eutrophication of lakes and estuaries in much smaller concentrations than those of human health concern. In the form of ammonia, nitrogen is also acutely toxic to fish.

The use of nitrogen fertilizers in the U.S. increased by more than a factor of four in the two decades between 1960 and 1981, to a 1981 total of 11.9 million tons per year. Per-acre use of fertilizers doubled between 1964 and 1984. However, the skyrocketing increase in the use of nitrogenous fertilizers may have reached its apex in the 1980s, and has apparently begun to decline slightly; the total tons of n-fertilizer used declined 12 percent, to 10.5 million tons of annual application, between 1981 and 1988.¹⁶

Long-term trend data for nitrate pollution is scarce. One ten-year study in Nebraska from the early 1960s to the early 1970s, showed a 25% increase, on a state-wide average, of groundwater nitrate-nitrogen concentrations. During that same time frame, nitrogen fertilizer use in Nebraska increased by a factor of four. A longer time-series study on nitrogen pollution from almost 4600 samples from wells all over Iowa showed that nitrate levels in groundwater from shallow wells less than 100 feet deep increased slowly but steadily from 1952 to 1979, where total fertilizer use and per-acre applications were increasing rapidly.¹⁷

Waters in karst (limestone-solution feature) topographies are especially vulnerable to nitrate contamination. In Iowa's Big Springs Basin, part of the Karst region that straddles portions of Iowa, Wisconsin, and Kansas, groundwater nitrate concentrations tripled (from five mg/L to 15 mg/L) from 1958 to 1982. These data suggest a yearly rate of increase of 0.4 mg/L of the average nitrate-nitrogen concentration. A farm survey in the basin in the mid-1980s showed that area farmers were not preparing nitrogen budgets to determine appropriate fertilizer application rates. Where such budgets were prepared, they were incomplete. Alfalfa and manure contributions to soil-nitrogen were being neglected, and thus in 1984 artificial fertilizers were being applied in excess of need at a rate of about 90 kilograms per hectare.¹⁸

Of course, the foregoing examples of nitrate contamination trend data are perhaps from regions with more vulnerable climate and geology, and the problems of nitrate contamination inevitably vary in severity from region to region. Nonetheless, "snapshot8, statistics from single-year national studies show us that nitrate contamination of groundwater is indeed a problem that is national in scope. A 1986 USGS sampling of 316 principal aquifers in 46 States turned up 288 (91%) with median nitrate-n levels below three mg/L; 27 aquifers (8.5%) with median nitrate-n levels between 3 and 10 mg/L; and 1 (0.5%) aquifer with median nitrate-n levels above 10 mg/L. The same USGS study found that 41 (13% of the aquifers) in twenty states had nitrate "hotspots" where greater than ten percent of the samples exceeded the EPA-human health 10 mg/L standard.¹⁹

Conservation practices on the farm, designed to protect soil and water quality, are often easier on the bank book as well. Thus, conservation tillage practices, which are critical to reducing damaging soil loadings into rivers and lakes, also can save farmers both work time, and fuel costs.²⁰ Soil nutrient testing can cut farmers' fertilizer costs significantly.²¹ And a recent study by a group at the University of Iowa found that agriculture and water quality goals may actually be far more compatible than many now perceive. The Iowa researchers found that, for several policy options for reducing agriculture's impact on water quality including regulation and research and education,

... the effects on water quality and profitability suggest that water quality can be significantly improved without losses to farm profitability. there is not necessarily a direct tradeoff between water quality and profitability. Improvements to both can be achieved simultaneously and, in some cases, without high implementation costs borne by taxpayers or farmers."²²

Manure management stands out as perhaps the most costly water-quality practice for most agricultural regions, and more work needs to be done to research cost-effec-

tive manure management techniques. As one farm researcher has observed, our agronomic universities need to

“stop funding research in animal-based agriculture production and marketing unless manures are an integral part of the research question. The corollary is to fund more research that both considers manure as an integral part of the production system and innovative ways of better managing this manure.”²³

Thus, integrating manure as a resource into whole-farm management plans will enable us to find cost-effective means of protecting waters from manure pollution.

Irrigation Pollution

Irrigation agriculture, which accounts for 90% of the water consumed in the West, results in poisoned return flows which cause serious damage to waters and wetlands, endangering aquatic wildlife with toxics including selenium, boron, molybdenum, and chromium. Selenium has been identified as the cause of an observed high (64%) rate of deformed and dead bird embryos at Kesterson National Wildlife Refuge in California.

Although they begin with the diffuse flow of irrigation water off of farm fields, irrigation flows end as point source discharges, conveyed through pipes or ditches. Irrigation return flows have been given an express exemption from NPDES permitting in the Clean Water Act, without any database showing that the flows are benign. In fact, the U.S. Fish and Wildlife Service's preliminary data indicate that almost half (48%) of the Service's refuges that have toxic contaminant problems receive agricultural drainage.²⁴

Grazing

Accurate national statistics on the total water quality damage wrought by grazing on both public and private rangelands are not currently available. However, the surveys that have been conducted on public rangelands do show massive damage to riparian areas from overgrazing. *Statewide surveys by the Bureau of Land Management (BLM) in Colorado and Idaho, and more limited BLM surveys in Nevada and Utah, showed that over 80 percent of assessed streams or riparian areas were in poor or fair condition.* Surveys by the U.S. Forest Service produced similarly troublesome results; in Arizona, 80 to 90 percent of the stream riparian areas in the Tonto National Forest were in unsatisfactory condition.²⁵

Rangeland expert Lynn Jacobs gives additional data on grazing damages to streams in the West, citing wildlife ecologist Charles Kay: “A recent study in Wyoming found that of 262 miles of streams, only 2% function now as they did in 1850. Eighty-three percent of the streams were lost or destroyed by overgrazing and accelerated erosion. The remaining 15% were in fair to good condition.”²⁶ According to another range technician, riparian damage from cattle is so widespread in the West that most people, including most range managers, have never seen a healthy stream channel.²⁷

And this riparian damage is done to vast areas of the west, for the sake of a tiny proportion of the nation's livestock: Although 90% of our western BLM lands are used for ranching, they produce only about 1.1% of U.S. cattle and sheep.²⁸ A GAO report on the health of riparian areas on U.S. public rangelands points out that the preferred management practice, cattle exclusion from streamside zones combined with revegetation, can reduce many of these impacts. Unfortunately, this practice is not required in many areas, and BLM staff are thwarted by their own top management in carrying out riparian restoration projects.²⁹

Livestock Confinement (Feedlots)

EPA's Office of Policy, Planning and Evaluation estimates that, based on the U.S. Census of Agriculture, at least 1.1 million farmers have livestock. Of those, only 5,000 to 10,000 operations nationwide may be above the current 1000-unit cutoff for NPDES permit issuance.³⁰ For the rest, no particular federal manure management requirements apply under the Clean Water Act. For an example of the severity of the manure pollution problem, a Chesapeake Executive Council (the governing body for the Chesapeake Bay cleanup) report that found that “Control of 85 percent of Pennsylvania's animal waste alone would accomplish a 40 percent nutrient reduction for the state.”³¹ The Chesapeake Bay Foundation concluded that Pennsylvania should toughen its manure management program, including the “targeting of enforcement efforts at those operations responsible for disproportionately high nutrient loads as well as committing more resources to the program in general.”³²

Mining/Resource Extraction

Of the 171,008 impaired river miles assessed by the States for the 1988-1990 305(b) reports, 14 percent, or almost 25,000 miles were polluted by mining runoff (designated "Resource Extraction" by EPA.)³³ As reported by GAO, a 1976 study by an EPA contractor found that "80 percent of the nonpoint source pollution from inactive and abandoned ore and mineral mining areas was occurring in five states—California, Colorado, Idaho, Missouri, and Montana. . . . The principal pollutants from these mines and mine waste piles were acid mine drainage, heavy metals, and sedimentation." As with all poison runoff sources, assessed sites are only a small portion of the total; in Colorado, for example, the state had studied the environmental impact from only about one-sixth (8,000 out of an estimated 50,000) of the State's noncoal abandoned or inactive mines.³⁴

Urban Development

Over 9800 impaired river miles, or 5.7% of total impaired miles, were polluted by construction runoff in the 1988-90 reporting cycle, and over 18,000 impaired river miles, or 10.6% of total impaired miles, were polluted by storm sewers from urban sites in the same cycle. (Urban watershed degradation and restoration are discussed at length below.)³⁵

Logging

A total of 9% of impaired river miles, or 15,459 miles, were reported by the States as polluted by silvicultural activities in the 1988-1990 reporting cycle. These figures are probably gross underestimates, however, since some key logging States such as Maine do not monitor for logging-related parameters such as siltation levels.³⁶ As EPA points out in its final 319 report, "The absence of information from 12 states significantly distorts the figures; Alaska and Oregon, in particular, have considerable forestry activity and their inclusion would have affected the total."³⁷

Fisheries biologists in the Northwest have discovered that logging tends to destroy fish habitat more profoundly than previously believed. Siltation from logging operations has long been known to clog the gravel beds that are the spawning grounds for threatened salmon species. Only since the early 1980s, however, have biologists discovered that salmon survival requires more than silt-free gravel beds for spawning. It also requires extensive drainage way protection, since the young-of-the-year are reared in the tiny, capillary-level first-order tributaries, abandoned meander ponds and seep-fed creeks. According to naturalist Robert Steelquist:

"There they grow rapidly on aquatic insects and other organisms. This burst of growth gives these cohos a distinct advantage for survival at sea when they eventually leave the freshwater system. . . . These pond and tributary habitats, however, had never been recognized for their contribution to coho productivity. Though measures were in place to protect main-stem habitats from destruction, the beaver ponds and small channels were particularly vulnerable to logging, road building, and culverts, often filling with slash and debris."³⁸

The road cuts, skid trails, and clear cuts that timber companies bring to forest lands do extensive damage to streams, rivers, and lakes around the country. In Maine, for example, a study done in the late 1970s by the Maine Forest Service found the following: 52% of harvesting sites had erosion or sedimentation problems; a substantial number of sites near State designated protection zones violated logging road runoff and stream crossing requirements; and siltation in waterbodies from logging operations located from 75 to 250 feet from the waterbody. (Despite this evidence of widespread harm to water quality, water-sensitive practices for logging sites are still voluntary for the vast majority of the Maine Woods.)

III. *What does the CWA say about these problems, and how good a job have EPA/States done in carrying out the will of Congress?*

A. *Runoff Mandates Dating Back to 1972 Were Abandoned or Implemented Poorly.*

The Clean Water Act has addressed runoff pollution explicitly since the Act's inception in 1972. As NRDC points out in the book *Poison Runoff*, runoff control mandates in the pre-1987 Act could have been used more effectively. In fact, since 1972 the CWA has required that EPA and the states devise comprehensive programs to control water pollution from both point and nonpoint sources. At least five pre-1987 sections of the Act—102(a); 201(c); 208; 303; and 305(b) relate to, or explicitly describe, poison runoff assessment, control and reduction.³⁹ Below we describe briefly these requirements of the *original* Clean Water Act, and the degree to which they were implemented around the country.

Sections 102(a), 201 and 208 provided broad authority to EPA to set up holistic pollution prevention programs to protect water quality (long before "pollution prevention" became a popular term). Section 201(c), addressing areawide waste treatment management, was designed to ensure that State and local managers of the construction grants program would not have "point source tunnel vision." Congress wanted comprehensive water pollution benefits, through the control or treatment of *all* pollution sources, not just point sources of raw sewage and industrial waste.

Section 208 can be seen as further explication of the "comprehensive program goal" set forth in section 201. Section 208 is perhaps the best-known of the pre-1987 poison runoff requirements of the Act, partly because so many citizens participated in the creation of 208 plans. Section 208(b)(2)(F) requires areawide waste treatment management plans to include:

"a process to (i) identify, if appropriate, agriculturally and silviculturally related nonpoint sources of pollution, including return flows from irrigated agriculture, and their cumulative effects, runoff from manure disposal areas, and from land used for livestock and crop production, and (ii) set forth procedures and methods (including land use requirements) to control to the extent feasible such sources."

A series of Congressional hearings in 1979 highlighted the following problems as having hindered the success of the 208 program:

- too little time in which to create the plans;
- discontinuity and lack of federal funding;
- inadequate water quality data; and
- poor management by EPA.⁴⁰

These same hearings emphasized several obstacles preventing managers from implementing practices to stem the flow of runoff:

- inadequate data on the effectiveness of control measures;
- institutional conflicts;
- need for public education on the benefits of nonpoint source control;
- [inadequate] funding, and
- debates over regulatory versus voluntary approaches to induce cooperation.⁴¹

A total of 176 Section 208 plans were created, plus another 49 State-level areawide plans. These 225 comprehensive water quality plans represented a definite step forward in the national knowledge base on diffuse, land-based pollution sources, and on watershed management in general. Another strength of the 208 process was that it had very high levels of public participation, particularly from citizen leaders from the League of Women Voters, and from local Resource Conservation Districts.⁴²

Sadly, during the 1980s, most 208 plans were shelved, and their excellent concepts have fallen by the wayside. Reasons for the failure of the 208 process, in addition to the overall lack of implementation mandates and other administrative problems listed above, include lack of funding; EPA timidity in issuing stringent guidelines, and in linking 208 implementation with mandates to achieve water quality standards;⁴³ and the turf battles that flare up when watershed boundaries cut across political boundaries.

Earlier, we described sluggish progress in employing a number of other tools, basic to the CWA, that have potential power to stem the flow of runoff. These include water quality standards, the 303(d) TMDL (Total Maximum Daily Loads and Wasteload Allocation) approach, 305(b) assessments, and other basic CWA tools. Water quality standards and their implementing mechanisms, including effective state anti degradation programs, are especially important to the success of runoff reduction programs, and are crucial to runoff programs for two basic reasons:

- All programs to control poison runoff must be designed to achieve compliance with water quality standards;⁴⁴
- At least before 1987, water quality standards formed the principal legal authority for controlling pollution generated by various land use activities.

Volunteers Needed to Help States Fill the Runoff Monitoring Gaps

Water quality standards must work hand-in-hand with well-targeted monitoring and assessment programs in order to be effective for any pollution control program, including runoff control. Section 305(b)(1)(E) of Clean Water Act requires that the biennial state water quality assessments include:

... a description of the nature and extent of nonpoint sources of pollutants, and recommendations as to the programs which must be undertaken to control

each category of such sources, including an estimate of the costs of implementing such programs.

Nonetheless, an EPA report on the main elements of State water pollution source monitoring programs suggests that, at least as of 1987, they were characterized by point-source "tunnel vision:" 1) self-monitoring of effluent by industrial and municipal dischargers; 2) compliance sampling inspections to cross-check discharger self-monitoring; and 3) effluent characterization studies for industrial dischargers. One of the five major "challenges" set forth for EPA in this study is to "Identify and Characterize Toxic, Conventional, and Anthropogenic Pollutants from *Nonpoint Sources*" (emphasis added). This report also recommended an in-depth study of the feasibility of initiating a "Citizen's Watch Program."

Both of these recommendations, if they were to be followed by EPA, would have major benefits for the ability of the States to characterize the threats and impairments due to land-based sources of pollution.⁴⁵ The good news is that apparently many States are now beginning to shift their monitoring efforts into land-based sources of water pollution, at least according to one 1992 report described in the next section.

The early 1980s represented perhaps one of the lowest periods in the history of poison runoff policy. Funding for the 208 program was gutted in 1981.⁴⁶ Then, in 1983, EPA contended that the Agency had no direct role in controlling poison runoff. In addition, the Reagan Administration actively opposed the establishment of a new, comprehensive runoff control policy.⁴⁷ Obviously dissatisfied with the lack of progress made by states in stemming the flow of runoff, Congress created new requirements in the 1987 Clean Water Act. For the first time, poison runoff was addressed head-on in a new section of the Act.

Section 319: Congress Put Increased Emphasis on Runoff Programs in 1987

In 1987, Congress created Section 319 of the Clean Water Act, designed to get States to identify waters damaged or threatened by runoff sources, and to develop comprehensive programs to heal those waters by reducing and eliminating pollution from those land-based sources. This program was not completely new; rather, it gathered up provisions for runoff controls dispersed throughout the Act and EPA guidance, and corral led them into one program.

This section of the Act strengthened the substantive standard for runoff control program effectiveness by requiring, in 319(a)(1)(C), nonpoint source reduction, "to the maximum extent practicable." By contrast, the earlier 208 programs were held to a much weaker standard of runoff reduction "to the extent feasible." As NRDC observed in *Poison Runoff*, the new standard of "maximum extent practicable" "will demand a higher level of control and a more stringent standard of proof before degradation or downgrading can be permitted."⁴⁸ Unfortunately, the promise of section 319 has not been fulfilled. True, there have been some notable success stories, described below. On a national basis, however, significant progress has not been shown under the new program.

B. *Watershed Restoration Success Stories*

Although Congress intended for the states to structure their poison runoff control programs as much as possible on a watershed basis (319(b)(4)), many states did not do so, choosing instead to write management plans based upon generic management practices intended to apply to all lands within each major land use category in the State. Some states, like Wisconsin, are exceptional in that runoff control is part of a comprehensive, watershed-based restoration and protection program that targets specific watersheds throughout the State. Other States are notable for individual watershed programs that stand as shining examples for others to follow. Three such programs are described briefly below.

Owl Run Watershed, in Fauquier County, Virginia, has a major nutrient and animal waste problem that contributes to dissolved oxygen and other water quality problems in the Chesapeake Bay. In response, the Virginia Division of Soil and Water Conservation, in cooperation with conservationists at the John Marshall Soil and Water Conservation District, are helping farmers to reduce manure pollution through a variety of techniques. Management practices in the 2800-acre watershed include soil testing and the creation of nutrient budgets, no-till cropping and filter strips, and the construction of manure storage tanks. Cost-sharing can cover up to 100 percent of the farmer's installation costs. The purpose of the project is to show that these kinds of practices are effective on a whole-watershed basis in reducing pollution. The water quality goals around which the project is designed include both in-stream, and downstream (Chesapeake Bay) restoration.⁴⁹

Big Darby Creek Watershed, Ohio. This multi-party project in central Ohio, coordinated by the Nature Conservancy, proves that farmers and environmentalists can be friends. A major goal of the project is to enroll 75% to 100% of the watershed's farmers in a conservation tillage program; roughly 15% of the watershed's farmers now use conservation tillage. Cooperation and rapport have been enhanced by the knowledge that Big Darby is a unique ecosystem with many endangered or threatened species of mussels and fish, and by the now-famous canoe trips in which each canoe holds a farmer and an environmentalist, who survey the riparian zones together as they glide down the river. Many farmers in the 370,000 acre watershed are also installing forested buffer strips with the help of state foresters. The project's 1992 budget totalled more than \$750,000, with monies obtained from the Soil Conservation Service, TNC, Environmental Protection Agency, and other agencies and groups. Big Darby is not a purely agricultural watershed. A remaining "wild card" for the fate of the headwaters is whether suburban developers, seeking to supply wealthy residents of Columbus with low-density "country" housing, will be convinced to adopt water-sensitive practices of their own.⁵⁰

Big Spring Basin, Iowa. The Iowa Department of Natural Resources, Geological Survey Bureau, has helped to make the Big Spring Basin famous for nitrogen input reductions that have saved farmers money while they reduce water pollution. Through a state cost-sharing program and extensive technical outreach to the roughly 200 Basin farmers, a reduction of over 1.2 million pounds of applied nitrogen was achieved between 1981 and 1989. This input reduction achieved a savings of about \$200,000 per year, or an average of \$1,000 per year per farm. With crop rotations that have farmers planting corn following alfalfa, maximum yields are often obtained with no addition of nitrogen to the soil.⁵¹

These "watershed success stories" are cause for hope that whole-watershed restoration works, that cooperation between different stakeholders can be gained, and that farmers are willing to adopt water-sensitive practices once they are convinced of three things: 1) that such changes are needed by an ailing or vulnerable ecosystem; 2) that such changes will not bankrupt their farm (and may even save them money); and 3) that the risk and burden of adopting new practices is shared equally among all other farmers and landowners in the watershed.

The three examples given—Owl Run, Darby Creek and Big Springs Basin—are voluntary programs. Their premise is that, given ample time, money, and technical outreach, all farmers will "volunteer" to "do the right thing." *Unfortunately, these programs may not be support in all impaired or threatened watersheds in each state, since ample grant monies to replicate their very favorable cost-share ratios statewide simply do not exist.* The need for urgent action in the case of impaired watersheds, and the need for accountability, demand more than voluntary programs.

C. *Recent Federal Oversight Shows EPA's Implementation of the 319 Program has Lacked Vision and Leadership*

The EPA's Office of Policy, Planning and Evaluation (OPPE) reviewed the 319 program in the summer of 1992 at the request of the Office of Water. The study looked at 10 sample state programs, as well as the management policies at the EPA headquarters and regions. The report reached 12 findings about what's right—and what's wrong—with the 319 program:

- 1) Because of the diverse nature of NPS [nonpoint source] pollution, there is no single definition of a NPS program.
- 2) Authority for Implementing State Management Programs is generally decentralized.
- 3) The extent to which States are institutionalizing their NPS programs varies widely.
- 4) The majority of the ten States do not have NPS programs oriented toward improving water quality on a watershed-specific basis. (Emphasis added.)
- 5) State Management Programs generally cannot be used to gauge the States' progress in implementing NPS controls.
- 6) Flexible guidance has enabled States to use 319 resources to address numerous NPS priorities.
- 7) States concentrate their use of 319 resources to focus on different priority activities.
- 8) The majority of States are making some effort to monitor the effectiveness of BMP implementation, though water quality impacts due to implementation of 319 are as yet unknown.

- 9) Section 319 has facilitated increased communication and coordination among agencies and organizations to develop and implement the State Management Programs.
- 10) Although most EPA Regional EPA Offices use several staff to address NPS pollution, few staff are dedicated specifically to assisting States to implement management programs or 319 grants.
- 11) EPA Regional office implementation of the 319 grant program varies considerably across EPA regions.
- 12) EPA provided States the opportunity to develop diverse NPS programs, but has not yet defined a vision or role for a national NPS program.⁵² (Emphasis added.)

OPPE then made the following two recommendations: a) the Office of Water should emphasize more clearly that a watershed protection approach should be the basis of State NPS programs; and b) Office of Water and Regional Offices should clearly define EPA's goals, strategy and role for the national NPS program.⁵³

One of OPPE's most important findings was that "The majority of the ten States do not have NPS programs oriented toward improving water quality on a watershed-specific basis." Furthermore, "the majority of [State Management Programs] do not identify strategic plans or milestones for achieving water quality goals for specific waters identified in their Assessment Reports."⁵⁴ Thus, the requirement of section 319(b)(4), that States shall, to the maximum extent practicable, develop and implement management programs on a watershed-by-watershed basis simply has not been enforced by EPA. Although of course some state-to-state variation is expected and even desirable in the 319 programs, the report clearly suggests the need for more program focus at both the federal and the State levels.

Lack of Adequate Funding

The General Accounting Office (GAO) also reviewed section 319 program implementation in 1990. GAO found that:

"officials in five of the states we visited identified the lack of resources as a key barrier to controlling nonpoint source pollution. Although some states have or will allocate million of dollars to deal with the problem they maintain that it would require billions to correct."⁵⁵

The total 319 appropriation for the past four fiscal years—roughly \$200 million—represents a drop in the bucket, compared both to present program needs, and to the total \$50 billion investment the nation made in sewage treatment, (significant given that poison runoff pollution dwarfs the sewage treatment challenge of the early 1970s).

D. *Summary of Findings on Existing Runoff Control Programs, and Prescriptions for Changes Needed*

As is true for many outstanding water quality problems, there are major gaps in the development and use of the Clean Water Act's basic tools for reducing poison runoff. Their absence is perhaps most acute within the context of fledgling state poison runoff control programs, partly because the tool of NPDES discharge permits is usually not available to give these programs the "backbone and bite" of an automatic enforceable mechanism. Thus, the relative weakness and under development of the tools that are available to runoff managers—water quality standards, water quality assessments targeted to land-based sources, TMDLs, and whole-watershed plans—has hindered progress in stemming the flow of poison runoff.

E. *On the Need for New Water Quality Criteria Relevant to Runoff Impacts*

Although EPA took a quantum leap forward with the publication of its document "Biological Criteria: National Program Guidance for Surface Waters" (April 1990), few states have acted to use biocriteria in important ways in assessment and/or permitting. No water quality standards at the State or federal level have been established to protect physical or hydrological features of aquatic habitat, such as the destruction of first-order streams noted above in the logging discussion. To protect whole aquatic ecosystems from the abuses of shopping mall and subdivision development, logging, mining, and other land operations, EPA needs to publish, and the States need to implement, water quality criteria for the following factors:⁵⁶

- biocriteria, such as EPA's recommended use of the Index of Biotic Integrity, first developed by Dr. James Karr and colleagues;
- habitat protection criteria for example, for pool-and-riffle complexes;
- drainage density metrics including minimal preservation and restoration of first-order streams;

- complete hydrologic specifications including year-round flow minima and minimum streamflow percentages of groundwater;
- seasonal and annual sediment loadings;
- nutrients (for eutrophication, not acute toxicity); and
- current-use pesticides.

In its review of EPA's management of the overall poison runoff program, the GAO listed the lack of appropriate standards as a key barrier to progress:

"Criteria documents" and other technical information are not available to states to enable them to set water quality standards for nonpoint source pollution. . . . State and federal officials told us that existing state water quality standards need to be supplemented because they were developed primarily to address point source problems and consequently have limited applicability in controlling nonpoint source pollution.⁵⁷

Summary and Conclusions on the States' Poison Runoff Management Programs under the 1987 Clean Water Act

In summary, there are many reasons why the 319 program, as implemented over the past five years, has failed to heal waters and watersheds damaged by land uses and abuses:

- 1) lack of watershed basis for the programs;
- 2) lack of adequate funding, especially for program staff at all levels;
- 3) inadequate enforcement of the mandate for States to require water-sensitive practices to be adopted wherever monitoring indicates a problem, or where pristine conditions indicate the need for protection;
- 4) major monitoring gaps;
- 5) inconsistent goals of other powerful federal programs, which thwart poison runoff control efforts;
- 6) continued reliance by the States on ineffective voluntary compliance for the adoption by landowners of water-sensitive practices;
- 7) reluctance to create relevant water quality standards to make the program meaningful; and
- 8) diffuse responsibility for the program; often administered and overseen by agencies that lack a primary water quality focus.

As a result of these major obstacles, our national poison runoff policy is based upon a voluntary, piecemeal approach riddled with inconsistencies, ineffectiveness, and massive gaps in funding, monitoring and staffing. As a result, we now have 50 individual runoff assessment and management programs that are all over the map in terms of comprehensiveness, stringency, degree of public participation, accountability, funding commitments, and in-stream effectiveness. And most programs fall on the voluntary, all-carrots-and-no-sticks side of the spectrum. Major strengthening changes are required in order to transform 319 into a publicly accountable and ecologically and economically effective program; unless these changes are made, it is likely to continue to be ineffective.

F. *The New Coastal Runoff Program Bears Promise, But Its Geographical Scope is Limited*

As part of the 1990 Coastal Zone Act Reauthorization Amendments ("CZARA"), Congress welded two existing programs—the States' Coastal Zone and Clean Water Act Section 319 programs—into a single, powerful approach to preventing and reducing runoff pollution in coastal—watersheds (including the Great Lakes). The centerpiece of CZARA is the implementation of enforceable management measures to reduce polluted runoff by specific land uses. Management measures are defined in Section 6217(g)(5) of CZARA as:

"economically achievable measures for the control of the addition of pollutants from existing and new categories and classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, citing criteria, operating methods, or other alternatives."

The phrase "greatest degree of pollutant reduction achievable" is more stringent than the "maximum extent practicable" standard for BMPs under Section 319. Other important provisions of CZARA include:

- the extension of coastal zone boundaries farther inland, to control the land and water uses that have a significant impact on coastal waters;

- implementation of additional management measures, where necessary to meet or protect water quality standards and to protect the waters of critical coastal areas;
- use of enforceable policies and mechanisms to implement the management measures; and
- program coordination to ensure consistency of this new coastal zone program with Clean Water Act programs under Sections 208, 303, 319, and 320.

For those who had grown weary of the haphazard nature of the BMP lists in the State runoff control programs under Section 319, the CZARA program looked like it might provide fairly seamless coverage of water-sensitive practices across wide swaths of coastal zones. The second major advantage of CZARA over the 319 program is that it requires EPA to provide the States with definite guidelines for those water-sensitive practices. Under CZARA, States will have to implement management measures in their coastal zones that are consistent with EPA's minimum management measures, thus removing some of the randomness (and weakness) that characterizes many 319 programs. EPA's final CZARA management guidance was issued in January, 1993.⁵⁸

Environmentalists and some progressive State administrators urged EPA and NOAA (who jointly administer the program) to base the management measures on objective, measurable criteria to ensure their effectiveness and accountability from state to state. Unfortunately, EPA and NOAA did not always heed this advice. For example, the draft guidance for controlling sediment pollution from farms originally would have required farmers to reduce erosion to the specified levels (the "T" soil loss tolerance standard). NRDC and several other organizations supported this standard. Although less than perfect, it would afford an objective performance standard around which each coastal zone farmer could structure site-tailored erosion controls. In the final guidance, however, EPA caved to pressure from commodities groups and other agricultural special interests, and recast the agricultural erosion control measure as the "Alternative Conservation Systems" described in the Field Office Technical Guides of the SCS. ACSs are generally sound practices, but provide little objective guidance to judge whether a farm has adopted sufficient erosion control practices.

Despite this weakening of the performance requirements for some of the management measures, however, the CZARA program remains a model for strong State runoff reduction programs. State implementation of required management measures for each land use category would improve 319 programs greatly if it were adopted for all watersheds, not just those in the coastal zone.

The coastal zone runoff program also contains some management measures, like vegetated riparian buffers, designed to protect and restore urban waters. Urban watersheds are severely degraded by a multitude of runoff sources. Federal and State money and leadership are needed to create community programs that restore urban streams to full vitality; we describe these problems and solutions in part V below.

IV. *Brief Analysis of Title III of The Water Pollution Prevention and Control Act of 1993: "Watershed Planning and Nonpoint Pollution Control."*

Major Points Concerning Title 3 of S. 1114

Title III of S. 1114 has several important elements that we support in concept. These include: 1) whole-watershed planning as the preferred approach for restoring water quality, particularly for those waters impaired wholly or substantially by land-based sources; 2) required management measures for new sources; 3) further coordination between water-quality-related Farm Bill programs, and Clean Water Act programs; 4) encouragement of volunteer citizen water quality monitoring; 5) significantly increased funding levels for nonpoint source programs, and 6) provisions for runoff controls for activities on federal lands.

There are other, smaller elements that we also support, as well as aspects of Title III that we cannot support because we believe they unnecessarily weaken watershed restoration and runoff prevention and reduction programs. We will provide to the Committee more detailed comments on Title III in the next few weeks.

Below we discuss each major section of Title III, with the bulk of our comments aimed at Section 304, Nonpoint Pollution Control.

Section 301. Water Quality Monitoring

This section replaces the existing section 305(b), which currently requires reporting every 2 years, with a new requirement for reporting every 5 years. We oppose this change, unless it is accompanied by tougher requirements for more comprehen-

sive, accurate, and consistent reports than are now required of the States. In particular, we suggest the following changes to the bill:

(a) States should be required to assess all watersheds in the state every 5 years. The bill says "all"—p. 78, line 7—but so does existing law. This should be clarified to include actual monitoring and assessment of every watershed.

(b) For each watershed, States should be required to monitor for all known or suspected pollutants, in the water, sediment and biota, and to assess physical, biological and other sources of impairment.

(c) In determining use attainment, States should be required to use uniform criteria established by EPA, so that States can be compared fairly. These criteria should prohibit identification of waters as "fully supporting" uses when water quality criteria are violated, or other evidence of impairment exists.

(d) State review and use of volunteer water quality monitoring data should be required as it is in Title IV of H.R. 2543 (the "Oberstar Bill"), not merely encouraged as it is in subsection (a) of Section 301 of S. 1114.

Further comments regarding citizen volunteer water quality monitors: although we support the inclusion of representatives of volunteer monitoring groups in the Water Quality Monitoring Council, the prohibition on travel expense reimbursement will severely curtail the ability of such representatives to participate in the work of the Council. Most volunteer groups, and the citizens who participate in them, have little or no travel funds to support long-distance travel for the work of official advisory councils and committees. We suggest that this stricture be removed altogether, or at least changed to allow for some reimbursement to be provided to those who can demonstrate economic need.

Section 302. Comprehensive Watershed Management

We support the idea of whole-watershed planning in concept, but we see it as a way to identify and address sources of impairment. Whole-watershed planning mechanisms must not be allowed to become an opportunity for nonproductive "griping," "finger-pointing," or "buck-passing" between point and land-based sources, or among members of the same polluter category. Neither must we allow watershed planning to degenerate into a forum for downgrading water quality standards and broader restoration and protection goals.

To avoid these problems, amendments to the Clean Water Act for whole-watershed planning need to include the following five explicit requirements: 1) retention of basic water quality standards-setting authority solely in the hands of the State water quality agency; 2) adoption and inclusion of all applicable water quality standards and criteria for all waters in the watershed within the restoration and protection plan; 3) establishment of habitat restoration and protection, biodiversity, wetlands, floodplains, and other broader aquatic ecosystem goals and objectives as part of the watershed plan; 4) adoption of antidegradation goals, objectives, and standards including Tier II and Tier III antidegradation provisions (the current S. 1114 only requires Tier I antidegradation provisions); 5) establishment of enforceable, minimum water quality protection and restoration requirements for all sources (esp. including land-based sources) prior to the establishment of "trading" schemes.

Regarding the States' designation of watersheds: the voluntary nature of this program could result in either "triage," where only a few of the most degraded watersheds are addressed, or "showcasing," where the pristine gems are protected to the neglect of virtually every other watershed. We have seen examples of both of these cramped State approaches to watershed designation. The bill's several financial and "point-source-based" incentives, aimed at encouraging the whole-watershed approach, will probably spur more states to designate more watersheds, but are not a substitute for a required protocol that will ensure objectivity and truly comprehensive watershed targeting on the part of the States.

We believe that the best approach to watershed targeting and State designation is to require States to follow an objective protocol for designation that reflects the truly comprehensive restoration and protection goals of the original Clean Water Act. For example, we support the approach of H.R. 2543, the Nonpoint Source Water Pollution Prevention Act of 1993, introduced this month by Congressman Oberstar. H.R. 2543 requires each State to list as a Target Watershed each and every watershed of a water already on a State 305(b), 319(a), or 304(l) list.

We suggest that S. 1114 be amended to reflect the same or similar, comprehensive targeting requirement, or at least a targeting protocol that will capture all (or most) of the watersheds that deserve such attention.

Regarding subsection (3) of this section: we oppose delegation to the States of any aspect of watershed planning for which EPA currently has review/oversight/approval responsibilities. This includes water quality standards (use designation; crite-

ria; and antidegradation programs), wasteload allocations, NPDES program elements (including 402(c) permit veto authority, etc.

Traditionally NRDC has opposed the use of ten-year permits. Section 302, subsection (4) calls for their use. At a minimum, permits must be allowed to be reopened for changes in effluent guidelines, and any other new requirements that pertain to the point sources in question.

Section 303. Impaired Waters Identification

In general, we believe this provision creates an open-ended process that will lead to a repeat of the mistakes made in other open-ended listing mechanisms, notably section 304(l). As noted above, the Clean Water Act needs a mechanism that will accomplish the restoration and protection, over time, of *all* watersheds. This provision, in contrast, leaves the listing completely in State hands. Based on our experience with 304(l), EPA and citizen petition authority is a poor substitute for comprehensive State identification. Since the success of the runoff program in S. 1114 turns on how many waters/watersheds get identified, this historical inability of the States to be objective and comprehensive in their identifications is of critical importance.

Section 304. Nonpoint Pollution Control

In general, for those waters covered by the program, this section would move us in the right direction; it does contain some key flaws that need to be fixed.

We address below the following key elements of Section 304; more-detailed comments on this section will be provided to the Committee in the near future:

- (a) Whole-watershed planning and flexible site-level plans;
- (b) required management measures;
- (c) new source requirements;
- (d) credit to farmers enrolled in Conservation Compliance.

We briefly address each of these main elements in turn below.

Whole-watershed planning: As we discussed above in our comments in section 302, the open-ended watershed designation process for the States is flawed because the history of section 304(l) and other similar voluntary listing exercises is that the States do not tend to follow objective, comprehensive protocols, and thus the lists are often absurdly small and inadequate. This flaw in section 302 casts serious doubt on the success of the watershed planning component of section 304, since many States could well opt to designate a handful of showcase watersheds to satisfy this provision, giving a false sense of security that the watersheds that need protection and restoration on a whole-watershed basis, will get such plans and protections.

Subsection (a) of Section 304 contains an enforcement provision for the required management measures and, by reference, the "optional" site-level plans. This provision does not "kick-in" until seven years have transpired. This is far too long for the States to wait before implementing the necessary legal authority to ensure that on-the-ground actions are taken. Such authority should begin as soon as *any* required management measure, or site-level plan, is first implemented.

Site-level plans: We support the inclusion in S. 1114 of the site-level planning option, although we prefer the approach taken in H.R. 2543, where flexible site-level plans within whole watershed programs are not optional but required. Nonetheless, the site-level planning option in S. 1114, if strengthened, could be workable and effective. In particular, we want to see requirements for the time-frame of the site-level plans changed so that the plans must be maintained into perpetuity; with provisions for plan revisions at certain reasonable intervals. In addition, the requirements for the site-level plans must specify that they are to be designed to reflect, and collectively to enable, the attainment and maintenance of the watershed plan's goals and objectives.

Required management measures: Since the "specter" of imposition of management measures is the "stick" that is intended to drive effective site-level water quality plans and state participation in voluntary watershed planning, the management measures must be strong, and include performance standards. Therefore, we are concerned that the management measures will not be a cursory revision of the so-called "Coastal Zone" (Coastal Zone Act Reauthorization Amendments of 1990—CZARA) management measures. Since the CZARA guidance is the current EPA compendium of runoff control measures, and the bill gives EPA only 90 days to issue its guidance, this prospect may be spurred on by S. 1114. Our single greatest problem with the CZARA measures is that they tend to lack performance standards, such as "T" (the soil loss tolerance factor) as the performance standard for farm erosion control.

With sound, objective performance standards, the choice and application of particular on-the-ground practices remains flexible and optional for the land operator. Without such performance standards, the management measure is either extremely open-ended and vague, as is the case for most measures in the EPA CZARA guidance, or results in the specification of actual practices that leave farmers and other land operators with little flexibility. Either outcome is undesirable, and S. 1114 needs to be amended to specify that the required management measures shall contain objective performance standards along with optional, flexible practices that directly conform to the water quality problems identified in the watershed.

New-source requirements: The definition of "New Source" in Section 304 should be based on the timing of the activity, not on a limited list of types of activities, as is now the case. On page 111, the "program implementation criteria" that pertains to new sources is unacceptably weak. The provision allows for "financial incentives" to serve as "enforceable mechanisms." This could be interpreted to mean, for instance, that developers don't have to use runoff-prevention-based site design, unless the State gives them cost-share money to do so. This would be an unacceptable outcome of this provision.

New Source Controls

Pollution Prevention in New Urban Developments

The concept of "pollution prevention," a congressional mandate under the Pollution Prevention Act of 1990, ideally would work hand-in-hand with the Clean Water Act programs relating to new urban developments. Preventing stormwater runoff from new urban developments is addressed implicitly or explicitly in both the "New Sources" provision of Title III of S. 1114, as well as the stormwater provision of Title IV. We propose that the following runoff prevention and reduction hierarchy be applied to requirements for new developments (as well as existing developments where appropriate):

- 1) for new development: runoff prevention through mapping and preservation of natural drainage ways, preservation of mature forest zones along waterways, and caps on the amount impervious surface;⁵⁹
- 2) for redevelopment and retrofitting of existing developed areas: runoff reduction through revegetation, impervious surface reclamation (e.g. retrofitting parking lots with grass swales designed to capture and filter the lot's runoff, thus preventing or severely reducing the need to discharge to a nearby stream);
- 3) chemical source controls and toxics use reduction (e.g. policies that require lawn service companies to test lawns for nutrient content and pest problems before applying chemicals, in order to reduce lawn chemical use); and
- 4) conventional "end-of-pipe" stormwater treatment devices, such as extended detention ponds, infiltration trenches, and catch basins.

Prevention-based stormwater controls are known to be more cost-effective than the usual dominant reliance on end-of-pipe retention ponds that has—characterized stormwater programs in such regions as suburban Maryland. The new town development project called Woodlands, Texas, pioneered "Design With Nature" as a stormwater management concept in the early 1970s and showed that the natural drainage/vegetative retention option saved over \$14 million for the development, a four-fold savings over the estimated costs of conventional stormwater management.⁶⁰ The lesson here is that cost-saving and water-protective measures have been known to the development community for at least two decades; the problem is that lax and fragmented local government planning and Zoning procedures have thwarted the widespread use of these design principles. The new coastal nonpoint pollution control program contains a site design management measure that is a step in the right direction towards "prevention design" for stormwater management. Without the addition of a requirement that verifiable performance standards be attached to this measure, even if accomplished at the county or other local level, this measure may remain little more than a well-intentioned, but toothless, concept.

For both new urban development, and existing development, prevention-based stormwater practices for Clean Water Act "402(p)" programs, as well as for urban components of revised section 319 and whole-watershed programs, are available that are cost-effective, affordable, and amenable to financing through use of a variety of funding sources including stormwater utilities. The challenge to Congress, EPA, and the States is to articulate a stormwater permitting policy that contains cost-effective minimum mandatory practices known to protect urban waters, and to provide funding for sufficient technical and programmatic support to municipal managers.

Giving exemption to farmers doing Conservation Compliance plans: This provision is acceptable only to the extent that the problem in the watershed is sediment pollu-

tion, since these plans only address soil erosion (and are triggered only by the presence of highly erodible land on farms enrolled in the Farm Bill Commodities program, not by the location of farms within water quality-limited watersheds). A particular problem with this exemption is that one of the most common practices used by farmers enrolled in Conservation Compliance, "no-till" cropping, is known to involve increased use of herbicides which particularly threaten groundwater supplies. Indeed, the Wall Street Journal has referred to this phenomenon as "Spare the Plow. . . Spread the Chemicals."⁶¹

In summary, we believe that the provisions of Title III, and of section 304 in particular, are workable and potentially effective if the strengthening changes outlined above are made. Below we have summarized our own overall watershed restoration and runoff control policy.

Summary of Our Whole-Watershed Restoration and Runoff Control Policy

Comprehensive requirements are critical to the effectiveness of both watershed targeting and landowner responsibility in the target watersheds. All watersheds of waters on the "sick lists"—305(b); 319(a); and 304(l)—need to receive some kind of "care" to restore them to full health. And, in order to accomplish the restoration goals in each target watershed, all landowners and operators must be required to tailor water-sensitive practices to their particular site. This latter policy is consistent with the recommendation for farm-level planning in Water Quality 2000, which states

*"Farm-level resource management plans should be mandatory for all farms in watersheds where surface waterbodies or around water systems are impaired or where there is a probability that these waterbodies or systems will become impaired. Further, in watersheds that are not determined to be threatened or impaired, if individual owner/operators are causing significant pollution or are clearly violating water quality standards and the situation cannot be resolved expeditiously by voluntary programs, these individuals should also be required to develop and implement farm-level resource management plans."*⁶² (Emphasis added.)

There were sixty organizations that ratified the overall Water Quality 2000 policy document that included this consensus statement on agriculture. Working through the Clean Water Network, we seek to apply this same watershed-wide, mandatory water quality planning policy to all land use categories in the target watersheds—logging, mining, subdivision development, as well as farming. Far from singling farmers out for special regulation, we seek to include farmers as full partners, alongside all other land users, in multi-lateral watershed restoration programs.

The heart of our polluted runoff prevention policy is whole watershed restoration coupled with required site-level water quality planning in the target watersheds, backed up by citizen water quality monitoring efforts. Without each of the three parts of this policy, the success of future watershed restoration efforts will be in jeopardy.

V. *Blighted Urban Waters Mirror Urban Decay—The Failure of Stormwater Programs and Need for Urban Watershed Restoration.*

Title III of S. 1114 is the bill's "whole-watershed" restoration and protection provision. Since we believe that urban watersheds deserve special attention within the Clean Water Act, we have included the following written testimony in anticipation and support of the upcoming hearing on watersheds.

Urban waters are among the most degraded in the country. Urban streams are concertized and channelized, used as conduits for stormwater runoff, industrial and municipal effluents, and raw sewage from leaking sewer pipes (often laid lengthwise in streambeds) or from combined sewer overflows. And as if all of this abuse were not enough, many urban streams are obliterated altogether, "enclosed," (a euphemism for transforming a stream into an underground sewer), or (as in the case of many groundwater springs and first-order and ephemeral streams) simply destroyed beneath the treads of earth-moving vehicles preparing the ground for new development.

A. *The Degradation of Urban Waters and Watersheds.*

According to a 1992 EPA study of the environmental impacts of stormwater discharges, urbanization degrades a disproportionate share of our nation's waters:

While urban population areas take up only about 2.5% of the total land surface of the country, stormwater pollution from these urban areas and associated urban activities (i.e., storm sewers/urban runoff, combined sewers, hydromodifi-

cation, land disposal, construction, urban growth, etc.) accounts for a proportionately high degree of water quality impairment (i.e., 18% of impaired river miles, 34% of impaired lake acres, and 62% of impaired estuary square miles reported under 319) when compared to that from rural activities (i.e., agriculture, silviculture and mining) which take up approximately 53% of the total land surface.⁶³

Urban stormwater pollution thus deserves high-priority attention by citizen activists, water quality officials and other watershed stewards.

The most comprehensive study of urban runoff quality to date is NURP, the Nationwide Urban Runoff Program. NURP was a joint project between USGS and EPA between 1979 and 1983, and it looked at stormwater quality in 28 cities across the country. NURP found certain pollutants to be virtually ubiquitous in urban runoff, in average concentrations high enough to warrant concern over loadings in downstream sinks—estuaries like Chesapeake Bay, and lakes like Lake Quinsigamond in Worcester, Massachusetts. Among NURP's key findings:

- copper, lead and zinc were each found in at least 91 percent of the samples;
- other frequently detected contaminants included arsenic, chromium, cadmium, nickel, and cyanide;
- significant average concentrations of total suspended solids, phosphorus, nitrogen compounds, oxygen-robbing organic matter (BOD), and fecal coliform were found.⁶⁴

Using national average runoff pollutant concentration data derived from the NURP study, NRDC made coarse estimates of runoff pollutant loadings for heavy metals, oil and grease, BOD, nitrogen, and phosphorus for seven urban areas around the country: Baltimore, MD; Washington, D.C.; Harrisburg, PA; Tidewater, VA; Los Angeles, CA; Atlanta, GA; and Cleveland, OH. Although the results varied from city to city, these "Poison Runoff Indexes" showed that runoff rivals, and in some cases surpasses, factories and sewage plants as a source of these pollutants. For instance, in most of the urban areas modeled by NRDC, zinc loadings from runoff exceeded the loadings from factories in the State or region.⁶⁵

The NURP authors described the water quality impacts of urban runoff as falling into three categories:

- short-term receiving water impacts during or following storm events (where pollutant *concentration* is important);
- longer-term downstream receiving water effects—the buildup of contaminants in the sediments of "sinks" like river mouths, lakes, and bays (where seasonal or annual pollutant *mass loads* are important). (Although NURP did not examine in detail this phenomenon, NURP data enable coarse estimates to be made of runoff annual mass loadings from large urban areas.)
- physical effects of stormflows on the hydrology and geomorphology of urbanized watersheds—including stream channel scouring (NURP did not examine this third type of effect, but acknowledged its existence.)⁶⁶

One logical outcome of NURP's acknowledgement of this wide range in receiving water effects from urban runoff is the creation of comprehensive watershed restoration programs. An example is the program developed for the Anacostia River, which flows through Washington, D.C. and into the Potomac River after collecting urban stormwater from dozens of tributaries in suburban Maryland. The Anacostia is well-known both for its severe degradation, and for the extraordinary vision and commitment of the local governments now working for its restoration. The Six-Point Action Plan for the Anacostia's restoration is keyed to a list of six problems that could apply to dozens of urban watersheds nationwide:

- 1) *Poor water quality*: The tidal Anacostia estuary has some of the poorest water quality recorded in the Chesapeake Bay system . . . rapidly filling with sediment and debris . . . low dissolved oxygen levels . . . sediments contaminated with toxics . . .
- 2) *Ecological degradation*: Dozens of miles of stream habitat have been severely degraded by uncontrolled runoff, and in some cases by engineering "improvements." Urbanization has profoundly altered the flow, shape, water quality, and ecology of these streams, many of which possess only a fraction of their original biodiversity.
- 3) *Loss of anadromous fish habitat*: As many as 25 man-made barriers prevent the upstream spawning migrations formerly made by menhagens, yellow perch, herring, and striped bass.
- 4) *Loss of wetlands*: Over 98 percent of the once-extensive tidal wetlands and nearly 75 percent of the watershed's freshwater wetlands have been destroyed.

5) *Deforestation*: Nearly 50 percent of the forest cover in the basin has been lost due to urbanization. The most severe losses have occurred in the riparian zones, where trees play a critical role in maintaining stream water quality, preventing streambank erosion, and providing both aquatic and terrestrial habitat.

6) *Lack of public awareness*: The 600,000 residents of the basin are generally unaware that they live in the Anacostia watershed. They do not perceive their connection to the river and its unique natural features, the desire to take part in their watershed's restoration and to become stewards is largely unfulfilled.⁶⁷

Despite all of this degradation, urban streams, lakes and bays are still oases of life for millions of urbanites. Jamaica Bay is one 'example. 'Like many-city waterbodies, Jamaica Bay is oddly wild, given that it lies within the boundaries of New York City, is bordered by Brooklyn and JFK Airport, and its waters are affected heavily by a mixture of urban runoff and sewage effluent. According to some of Jamaica Bay's stewards,

" . . . fishing for sport and food has long been a favorite recreational activity in the park. Weekend fishermen line the railings of bridges and piers while others venture out in personal boats or charter fishing boats in hopes of a good catch."⁶⁸

The City of New York Department of Parks and Recreation, and the managers of the Gateway National Recreation Area, recently surveyed 450 fishermen who fish from the shores and bridges of Jamaica Bay. The survey revealed that 304 of the fishermen, or two-thirds, eat the fish they catch, despite the fact that it is contaminated with low levels of PCBs.⁶⁹ And Jamaica Bay is not unique. People of all ages can be seen fishing for crayfish in Sligo Creek, an Anacostia tributary, in Takoma Park, Maryland; and for catfish off of bridges over the Charles outside of Boston. People fish regularly in Lake Erie off of the 55th Street pier in Cleveland, and off of wharves in South San Francisco Bay. The fact that at least some of these people eat what they catch, even if it may be contaminated, is not a reason to shut these active fisheries down. It is a reason to work with a sense of urgency to reduce and eliminate the toxics now flowing into them.

B. *On the Need for An Urban Watershed Restoration Program in the Clean Water Act.*

Comprehensive watershed restoration programs are needed for our city waters—that highlight the importance of urban waters to inner-city dwellers, rely on local citizen groups and municipalities to initiate and structure long-term restoration strategies (that may include community-based studies like surveys of urban fishing patterns, and locally-based skilled jobs like urban forestry), and channel federal dollars to selected urban watershed projects to help fund the restoration work.⁷⁰ Such programs would help to focus the energies of urban activists into the work of "re-greening the urban landscape," enshrining this ecology goal as a critical part of the Clean Water Act's goal of "fishable, swimmable", waters for all Americans.

C. *On the Need for Jobs Within Urban Watershed Restoration Projects*

In restoring our degraded urban watersheds, we will help to build the skill level and the economic self-reliance of the inner city work force. New generations of skilled and semi-skilled workers are needed to restore damaged wetlands and floodplains and to design and build riparian buffer strips, runoff detention ponds, and combined sewer overflow storage tanks, all of which can be part of new urban watershed restoration programs.

It is critical that all urban watershed restoration programs, targeted to waters as diverse as the Anacostia in Washington, D.C.; the Los Angeles River, or Cleveland's Lake Erie tributaries, have three essential elements: a) primacy of local citizen group and local government leaders (with federal and State government in supportive roles); b) provision of jobs and career paths for inner city youths and skilled/semi-skilled workers seeking employment; and c) emphasis on "bioengineering" restoration, such as constructed wetlands and tree plantings on stream banks. Without these three essential elements, there is little guarantee that our investment in urban watershed revitalization will yield long-term returns in the form of "self reliant, green communities."

VI. Conclusion

Federal and State water quality managers have historically missed out on opportunities to stem the flow of poison runoff via implementation of several key provisions of the Clean-Water Act, most of which were available prior to the 1987 amendments. These key provisions include: development and application of relevant water

quality standards; whole-watershed planning and management; and creating focused, effective State runoff management programs. As a result of the failure to evolve these and other tools into effective runoff reduction and prevention programs on a watershed basis, the waters of the United States continue to be degraded by poison runoff from virtually every category of land use.

New federal and State programs, including the Coastal Zone Nonpoint Pollution Control Program, and municipal and industrial stormwater permits, provide new opportunities for States and EPA to eliminate the foot-dragging and unfocused, piecemeal approach to runoff control that occurred in the past. Whole-watershed management approaches are needed to tie together urban and rural dwellers in the goal of restoring their common waterways to full health. Such programs offer the promise that we can correct the mistakes of the past and actually stem the flow of poison runoff. Crucial to the success of these programs is the formidable political challenge of establishing enforceable requirements for water-sensitive land use practices and site designs that accrue to all of a watershed's landowners in a fair and equitable manner. If these elements are incorporated into a strengthened S. 1114, the bill has a strong chance of encouraging and creating the kind of watershed restoration and protection that all 50 States now sorely require.

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 30. Long, Catherine, U.S. EPA, Office of Policy, Planning and Evaluation. Personal communication, April 23, 1991. See 40 C.F.R. § 122.23, Part 122 Appx. B.
 31. Chesapeake Bay Foundation (CBF), September 1989. "Improving Water Quality Through Effective Implementation of Pennsylvania's Manure Management Regulations," Lamonte Garber, ed., 3.
 32. CBF, "Improving Water Quality Through Effective Implementation of Pennsylvania's Manure Management Regulations," 1.
 33. EPA, *1990 National Water Quality Inventory*, 12.
 34. U.S. General Accounting Office (GAO), 1990. *Water Pollution: Greater EPA Leadership Needed to Reduce Nonpoint Source Pollution*, GAO/RCED91-10, 22.
 35. EPA, *1990 National Water Quality Inventory*, 12-13.
 36. EPA, *1990 National Water Quality Inventory*, 12-13.
 37. EPA, *Managing Nonpoint Source Pollution*, 19, "Silviculture." [Note: The 1988 Oregon Deq. Report, entitled "1988 Oregon Statewide Assessment of Nonpoint Sources of Water Pollution" does allow the interested reader to compile watershed-based (and component waterbody-based) data on land use sources contributing to impairments; thus, EPA's statement about Oregon not reporting data on silvicultural water quality effects is apparently an error.]
 38. American Forestry Association, July/August 1992, "Watershed Wars: Salmon and Forests, Fog Brothers," Robert Steelquist, ed., in *American Forests*. 31.
 39. Another section—101(e)—contains a broad mandate for public participation that has been grossly underemployed in the campaign to stem the flow of runoff. Without widespread public participation in the form of volunteer water quality monitoring programs and citizen involvement in the creation of whole-watershed management plans, runoff control programs may lack crucial public support and political momentum.
 40. House Committee on Public Works and Transportation; 1980 oversight hearing on the 208 program, 16 and 18.
 41. House Committee on Public Works and Transportation; 1980 oversight hearing on the 208 program, 27-28.
 42. According to a longtime water policy activist with the League of Women Voters of the United States, there were "tens of thousands of meetings on 208 plans nationwide over a three-year period in the mid-1970s, and LWV members headed many of the 208 committees . . . virtually every local League was into the 208 process." Merilyn Reeves, former Board member, League of Women Voters of the United States. Personal communication, May 15, 1992.
 43. Thompson, Paul, 1989. *Poison Runoff: A Guide to State and Local Control of Nonpoint Source Water Pollution*, Natural Resources Defense Council, 21-22.
 44. To quote from *Poison Runoff*,
 ". . . the degree to which poison runoff can be controlled dictates whether or not designated uses of individual waters are considered attainable:
 'At a minimum, uses are deemed attainable if they can be achieved by the imposition of effluent limits . . . and cost effective and reasonable best management practices for nonpoint source control. 40 CFR 131.10(d), 131.10(h)(2); 33 U.S.C.1315(b)(1).'
- In effect, a state cannot legally decide that the minimum fishable/swimmable goal of the Clean Water Act is not attainable in a particular surface water unless the state has developed a poison runoff control program that controls nonpoint sources to the maximum extent practicable, and still is unable to achieve fishable/swimmable water quality. Similarly, under EPA's antidegradation regulation, even where water quality is better than necessary to protect designated instream uses, allowing further degradation is prohibited unless, among other requirements, the state assures the achievement of "all cost effective and reasonable best management practices for nonpoint source control." 40 CFR 131.12(a)(2); 33 U.S.C. 1313(e).
- From: Thompson, *Poison Runoff*, n.21, chapter two, 30.
45. U.S. Environmental Protection Agency (EPA), 1987. *Surface Water Monitoring: A Framework for Change*, 4, iv, 27.
 46. Copeland, Claudia and Jeffrey A. Zinn, 1986. *Agricultural Nonpoint Pollution Policy: A Federal Perspective*, Congressional Research Service, 8-11. EPA did try to pick up the slack in 208 funding via continued grants to States under CWA sections 106 and 205(j). EPA, National Water Quality Inventory, 1984 Report to Congress, 67. EPA 440/4-85-029.
 47. Thompson, *Poison Runoff*, 22.
 48. Thompson, *Poison Runoff*, 26.
 49. Virginia Dept. of Conservation and Recreation (undated) "Owl Run Livestock BMP Research Watershed" (fact sheet). VA Dept. of Conservation and Recreation, Division of Soil and Water Conservation, 203 Governor St., Suite 206, Richmond, VA 23219-2064.
 50. Allan, Kelly (1991), "One of the Last of the Best," in *The Nature Conservancy Magazine*. January/February, 1991. Also: Gary Overmier, U.S. Soil Conservation Service, personal communication, January 1, 1993.
 51. Hallberg, et al., 1991. *A Progress Review of Iowa's Agricultural-Energy-Environmental Initiatives: Nitrogen Management in Iowa*, Iowa Department of Natural Resources, 5-6.

52. U.S. Environmental Protection Agency (EPA), Office of Policy, Planning and Evaluation, Draft Report: State Implementation of Nonpoint Source Programs, June 29, 1992, at 7, 9, 11, 15, 18, 21, 24, 28, 31, 33, 34, 37.

53. EPA, Draft Report: State Implementation of Nonpoint Source Programs, 39-41.

54. EPA, Draft Report: State Implementation of Nonpoint Source Programs, 15.

55. GAO, *Water Pollution: Greater EPA Leadership Needed to Reduce Nonpoint Source Pollution*, 28-29.

56. We recognize that these criteria will need to be tailored to specific bioregions and basins; nonetheless, EPA guidance to the States, and a legislative mandate for adoption of such criteria, would be immensely beneficial.

57. GAO, *Water Pollution: Greater EPA Leadership Needed to Reduce Nonpoint Source Pollution*, 14.

58. Federal Register publication is pending.

59. This has been shown to be quite feasible as a design principle for landscape architects, and less costly by a factor of four than conventional pave-as-usual, treat-later, end-of-pipe approaches. Sykes, R., 1989, "site Planning," Chapter 3.1 in *Protecting Water Quality in Urban Areas, Best Management Practices for Minnesota*. Minnesota Water Pollution Control Agency. The author, Robert D. Sykes, ASLA, is Associate Professor of Landscape Architecture, University of Minnesota. "The modern classic example of a comprehensive approach to development incorporating all of these [water-sensitive site design] goals is Woodlands New Community located north of Houston, Texas, planned and designed by Wallace, McHarg, Roberts and Todd, Landscape Architects and Planners, Philadelphia, Pennsylvania. . . . In the original planning,—engineers compared the cost of the natural drainage system to that for a conventional approach and found that the natural drainage option saved over \$14 million." *Id.* 61, 3.1-7.

60. Sykes, R. (1989), Site Planning. Chapter 3.1 in the State of Minnesota Pollution Control Agency's handbook, "Protecting Water Quality in Urban Areas."

61. The Wall Street Journal (July 8, 1993) article by Scott McMurray entitled "No Till Farms Supplant Furrowed Fields, Cutting Erosion But Spreading Herbicides." (page B1).

62. Water Quality 2000 (1992), *A National Water Agenda for the 21st Century, Final Report*, 21.

63. U.S. Environmental Protection Agency (EPA), 1992. *Environmental Impacts of Stormwater Discharges: A National Profile* (EPA 841-R-92-001), 7.

64. U.S. Environmental Protection Agency (EPA), *Results of the Nationwide Urban Runoff Program*, Vol. 1—Final Report, Chapter Six, "Characteristics of Urban Runoff."

65. See, for example, NRDC's summary of results for the four Chesapeake Bay cities within: Cohn-Lee, R. and Cameron, D. (1992) "Urban Stormwater Runoff Contamination of the Chesapeake Bay: Sources and Mitigation." *The Environmental Professional*, Vol. 14, 10-27.

66. EPA, *Results of the Nationwide Urban Runoff Program*, 5-8 and 5-9.

67. Metropolitan Washington Council of Governments, *Watershed Restoration Sourcebook*, 15-17. Anacostia Restoration Team, Dept. of Environmental Programs. Collected papers presented at the conference: "Restoring Our Home River: Water Quality and Habitat in the Anacostia," November 6-7, 1991, College Park, Maryland.

68. Lane and Tanacredi, 1987. "Coastal Fisheries Project at Jamaica Bay Completed." In *Park Science* (Winter 1987).

69. Gateway National Recreation Area, Shore Based Recreational Fishing Survey, 1985-1986. The summer and winter flounders that are among the most popular eating fish from the Bay have average PCB concentrations around 0.1 to 0.2 parts per million, roughly ten times less than EPA's recommended tolerance level of 2 parts per million.

70. Discussion Draft (June 30, 1993). "The Urban Watershed Restoration Act of 1993." Office of Congresswoman Eleanor Holmes-Norton.

TESTIMONY OF GERALD VAP, VICE PRESIDENT, NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS

Mr. Chairman and members of the subcommittee, my name is Gerald Vap and I am Vice President of the National Association of Conservation Districts (NACD). I also operate a farm supply outlet that sells hardware, nursery and garden supplies, native grass, alfalfa and sorghum seed. I appreciate the opportunity to present our concerns and recommendations on nonpoint source pollution and the Clean Water Act.

The National Association of Conservation Districts (NACD) represents nearly 3,000 local conservation districts across the United States, more than 15,000 men and women who serve without pay on their governing boards. Conservation districts are independent, special purpose districts that coordinate and carry out comprehensive, natural resource management programs that address forest and rangeland management, wetland protection and enhancement, agricultural and urban erosion and sediment control, wildlife and fish habitat management, and nonpoint source pollution prevention and abatement for the protection of ground and surface water quality.

CONSERVATION DISTRICTS

Conservation districts are special purpose units of government comprised of, and governed by, local citizens who know their own needs and work to develop the most

practical and effective solutions to natural resource management problems locally. Conservation districts have long been involved in developing and carrying out a variety of local conservation programs emphasizing the wise use, management, and development of our natural resources. Through their nationwide, grass-roots delivery system, districts coordinate and carry out innovative programs to address many natural resource management concerns, including nonpoint source water pollution prevention and abatement. Conservation districts provide a unique, local delivery system, the strength of which lies in local ownership of the programs.

Conservation districts and their cooperating state partners have been addressing nonpoint source pollution problems for a number of years. As early as 1977, when the Clean Water Act Amendments established Section 208 and recognized nonpoint source pollution as a major impediment to our Nation's clean water goals, the district delivery system was recognized by state and federal agencies as an effective vehicle for delivering assistance to landowners. In fact, districts were named lead local implementation agencies for agricultural nonpoint source pollution programs in some 38 states. The Experimental Rural Clean Water Program projects, begun in the late 1970's and early 1980's as an offshoot of the 1977 amendments, often utilized districts to deliver both technical and financial assistance to land users in high priority watersheds. Similarly, many of the state Clean Water Act Section 319 nonpoint source management programs recognize the conservation district delivery system as the best way to achieve practical solutions to local nonpoint source pollution problems. In addition, 31 states operate various types of state-funded financial incentives programs that address agricultural and other water quality problems. Many of these programs, which operate through local conservation districts, have been helping landowners with water quality problems since the mid-1970's.

Although traditionally conservation districts have been thought of in terms of their work with agriculture, over the past two decades many have expanded their involvement in a number of other resource areas such as urban erosion and sediment control, stormwater management, forestry, surface-mined reclamation, and lake, coastal and estuarine management initiatives.

NONPOINT SOURCE POLLUTION—THE PROBLEM.

It is widely recognized that runoff from diffuse, or nonpoint sources such as cropland, construction and mining activities, urban streets and lawns, and others had become the principal source of impairment to our nation's waters. The extent and intensity of nonpoint source pollution problems are becoming more evident as state and federal agencies sharpen their abilities to detect pollutants and assess their origins. The most common nonpoint source reported is agricultural runoff, accounting for roughly 60% of impaired lakes and rivers.

Programs to address nonpoint source pollution require a different institutional framework from that of traditional point source efforts. The diffuse nature of the problem renders the command and control approach, used effectively to address point sources, unworkable. By enacting 1987 Clean Water Act Section 319, Congress recognized that the solution to nonpoint pollution lies in state and local action. Section 319 calls for the development and implementation of state nonpoint pollution management programs. Through these programs, and through a number of state-initiated programs, considerable progress has been made in developing the infrastructure needed to control nonpoint pollution. Now that much of the groundwork is in place, a serious commitment of manpower and funding—from local, state and federal governments—is needed to translate the nonpoint agenda into action.

GENERAL PRINCIPLES

The nation's water quality goals must be holistic and should seek to achieve and maintain clean water for all uses. Comprehensive resource management programs that include water quality goals should be developed on a watershed basis, targeting actions where they will do the most good. Pollution prevention should be the foundation of our water quality agenda. Within a national framework, a mix of voluntary action and regulation is needed. Where water quality standards are violated or at risk of being violated, an iterative approach of implementing more stringent levels of runoff management measures should be required. Monitoring and assessing the state of our water resources are needed to provide accountability for state and local program efforts, as well as to target limited resources to the most pressing problems. Information and education, and technical and financial assistance must be utilized to empower all segments of society to address water quality problems. Funding, from all levels of government, must be increased to match the scope of the problem.

NACD recommends that we continue the strategy set forth in Section 319 whereby states are delegated authority under federal legislation to develop management programs responsive to local needs and conditions. The management programs should continue to emphasize technical and financial assistance coupled with educational programs. Site-specific nonpoint source pollution management plans also should be predicated on technology-based standards that protect water supplies from adverse impacts from nonpoint pollution. The standards should be based on existing or planned use of the water resource and should be developed within a national framework with input from states and various affected communities including agriculture, industry, and conservation and environmental groups.

BASIC APPROACH

The strategy set forth in the current Section 319 is essentially sound: States are delegated authority under federal legislation to develop management programs responsive to local needs and conditions. The management programs should continue to emphasize technical and financial assistance coupled with educational programs. Further, the programs must be predicated on economically feasible and technically attainable standards that protect water supplies from impairment. Section 319 assessment and management programs need to be reviewed for re-approval every five years to measure the progress of the states in achieving their program goals, and to provide for the inclusion of new nonpoint control strategies and technologies.

FEDERAL ROLE

The Environmental Protection Agency (EPA), the principal federal agency charged with water quality protection, should have the overall lead in developing guidance for implementing state nonpoint management programs. EPA's role should include working to increase public awareness of nonpoint problems and solutions, and to assist states in developing incentives and economic opportunities to encourage the adoption of state and local management practices. EPA also should provide technical and financial assistance to states in developing, refining and carrying out their programs.

The U.S. Department of Agriculture should be designated to assume a strong role in providing technical and educational assistance to state and local governments, in carrying out their programs. The Soil Conservation Service, in cooperation with local conservation districts, should provide technical assistance to land managers as they develop and carry out comprehensive resource management plans.

STATE ROLE

States, operating within the overall guidance set by EPA, should have the lead role in setting priorities and developing the program mix that works best for the specific problems, as well as the social and economic conditions, for the individual state. State programs should continue to emphasize educational and outreach activities to raise public awareness of nonpoint pollution, and their role in solving and preventing nonpoint problems.

States also need to provide technical and financial assistance and incentives to land managers in addressing nonpoint problems. Backup regulatory mechanisms, such as "bad actor" provisions in the programs, also should be included in a state's program mix. Specifically, conservation district approved farm-level resource management plans should be required for all producers in watersheds where surface water bodies or groundwater systems are impaired or where there is a significant probability that these water bodies or systems will become impaired due to agricultural pollution. These plans should be developed based on an integrated evaluation of options for environmentally sound cropping systems and nutrient, pest, water, livestock and sediment management.

LOCAL ROLE

Local government will have the principal accountability in carrying out nonpoint pollution control programs. Conservation districts, with technical assistance from the USDA Soil Conservation Service, should have the lead responsibility for local implementation and plan approval where their expertise is the best—in agricultural, urban and forestry programs. The state and local programs should emphasize development and implementation of comprehensive resource conservation and management plans that address the full range of nonpoint source pollutants.

It is critical that both state and local governments have the flexibility in nonpoint pollution control programs to respond to unique local and regional factors. Because of factors such as climate variations, differing institutional arrangements among state and local government agencies and other widespread variations across the

nation, state and local management entities need wide latitude to develop program mixes that best fit their own individual needs and situations.

FUNDING

Lack of adequate funding is one of the chief impediments to more effectively addressing nonpoint problems. Congress should fund Section 319 grants to states at a minimum level of \$500 million per year. Congress also should greatly expand USDA's water quality program funding and responsibilities under Section 319. The bulk of Section 319 funds should be made available to states for carrying out the management programs mandated by the Act. Additional funds also should be made available to the Soil Conservation Service to provide increased conservation technical assistance for local implementation efforts. After the state revolving loan fund programs required by the Act have been fully capitalized in 1994, Congress should retain the roughly \$2 billion per year Clean Water Act funding to continue addressing ongoing point and nonpoint source pollution problems.

S. 1114

Our comments on S. 1114 reflect an initial staff review of the bill. Our national committee system is currently reviewing the document and will be able to provide more detailed comments in the future.

Overall, NACD supports the approach taken in S. 1114. We believe that building on the foundation of the current Section 319 is a sound direction in which to steer the nation's nonpoint pollution control efforts. State leadership in developing and implementing nonpoint programs, as well as the strong program role suggested for substate regional and local agencies and organizations will be essential to the success of this effort.

Specifically, NACD supports establishing state water quality monitoring programs with technical and financial assistance from the federal government. States need more and better data on where water quality problems exist and what the major contributors are. With respect to the state water quality monitoring councils, NACD recommends that they include representatives of affected user groups: agriculture, silviculture, mining, construction. We also recommend that conservation district and state conservation agency representatives should be included on the state council since they will play an important role in carrying out the state nonpoint management program.

NACD and conservation districts strongly support the watershed-based approach outlined in S. 1114. Conservation districts have been practicing and advocating this program approach for more than 50 years. We're also pleased to see specific recognition of conservation districts as possible management entities for watershed management units.

NACD supports the inclusion of trading schemes, but not as outlined in S. 1114. We believe they should be strictly voluntary and should not allow a point source permit to be more permissive at the expense of nonpoint sources. We believe that water quality gains need to continue for both point and nonpoint sources.

The foundation of the conservation district philosophy is that all land users should have a comprehensive site-specific conservation plan in order to prevent environmental degradation from soil erosion, nutrient and pesticide runoff and other sources. We believe that states should be encouraged to develop voluntary, incentive-driven programs that combine education and technical and financial assistance, to persuade land users to work with their local district to develop and implement these plans before pollution problems occur. Although we generally favor this unprescribed approach, we also believe that, in impaired or threatened watersheds, land users who fail to comply with voluntary programs should be required to develop site-specific, technology-based conservation plans.

With respect to the time frames outlined in S. 1114, NACD maintains that 180 days is an unrealistic deadline for the publication of guidances under the act. As evidenced by the lengthy delays in publishing guidances under the 1990 Coastal Zone Act Reauthorization Amendments, six months is far too short a period to allow sufficient public and user group input.

The time frame for state program revisions is also too short. Again, NACD believes that there needs to be ample opportunity for input by the public and affected user groups in developing revising state nonpoint programs.

Given the proliferation of different water quality initiatives in the past few years, program coordination will also be critical to the success of this program. The act and the guidance need to clearly instruct agencies such as EPA, USDA and NOAA to work together closely in carrying out the mandates of the Clean Water Act and ensure that it works to complement, rather than compete with, initiatives such as

Coastal Zone Act Section 6217, the Farm Bill water quality initiatives and ongoing state and local nonpoint programs. States also need to be encouraged to coordinate the different nonpoint program elements within the program such as the coastal, urban, agriculture and forestry components. Resources are too scarce and budgets too tight to duplicate program efforts.

NACD strongly supports the increased funding levels authorized under S. 1114 and we urge the Congress fund these programs at the levels authorized. The planning and implementation for thousands of water quality plans will create a tremendous workload for federal, state and local conservation and resource management agencies. The technical assistance delivery system is already severely strained by the 1985 and 1990 Farm Bills, as well as the many ongoing state and local conservation initiatives. The Coastal Zone Act and Clean Water Act, will only add to that.

In funding this new initiative, it is important to recognize significant increases in technical assistance will be needed to help land managers implement the required management measures and site-specific plans. This will mean not only adequately funding the Section 319(h) grants and other Clean Water Act authorizations, but also providing significant increases in technical assistance from agencies such as EPA and the USDA Soil Conservation Service. If Congress isn't serious about funding this program, NACD recommends that it be scaled back to a level that can be reasonably accomplished with the funding that is available to carry out its mandate.

NACD supports allowance regional variations in the development of management measures. There are vastly different conditions across the country that will require many different program mixes for water quality efforts to be successful. In addition to regional flexibility, local program flexibility also will be critical for the attainment of nonpoint program goals. Differences in social, economic and political institutional arrangements, as well as vast climate variations across the nation mean that each state and substate and locality needs to have enough flexibility to tailor a nonpoint program to its specific needs.

Overall, NACD believes S. 1114 is a good starting point for building on Section 319 and other ongoing federal, state and local nonpoint source pollution management efforts. For the past six years we've been running Section 319 essentially as a demonstration program, funding it at only a very basic level. We believe it's time to move the nation's water quality agenda another step forward.

Thank you for the opportunity to share our association's views.

TESTIMONY OF ROB OLSZEWSKI, REPRESENTING AMERICAN FOREST AND PAPER ASSOCIATION

Mr. chairman and Members of the Subcommittee, my name is Rob Olszewski, Manager of Forest Hydrology for the Georgia-Pacific Corporation. While I am testifying today on behalf of the American Forest and Paper Association (AFPA), the national trade association of the U.S. forest products, pulp and paper industry, I am also a small non-industrial landowner in Florida and a professional forester formerly employed with the Florida Forestry Association and the Florida Division of Forestry.

BACKGROUND

Our industry accounts for 7 percent of all U.S. manufacturing output. AFPA's member firms directly employ 1.6 million workers in the growing of trees, the manufacture of forest and paper products, and the recovery and recycling of paper products. Collectively, the industry injects \$43.5 billion into local economies and ranks among the top ten employers in 46 of the 50 states.

Unlike many industries, we are regulated for point discharges from our manufacturing facilities and subject to nonpoint Best Management Practices (BMPs) from our forest lands. Needless to say, our interest in S. 1114 is quite substantial. For example, we estimate the point source control section of the bill will cost our industry well over \$10 billion in capital costs and \$1 billion annually in operating costs. An enormous sum for a capital intensive industry such as ours.

Although this hearing is confined to issues affecting nonpoint source runoff, we request, with your permission, Mr. chairman, to submit a longer statement for the hearing record which details our serious concerns with a number of other provisions in the bill.

NONPOINT SOURCES

It has been estimated that at least 50% of all water pollution comes from nonpoint sources. If we are to achieve water quality improvements, then it is appropriate to consider additional approaches in this area.

Unlike others, the forest industry, which includes small woodlot owners, has been implementing nonpoint source Best Management Practices—what is in effect called “management measures” in S. 1114—for a number of years. Since passage of the 1972 Clean Water Act, all states with significant forest management activities have either passed forest practice laws or developed BMPs, approved by EPA to minimize the impact of timber harvesting on water quality.

Consequently, forest activities contribute relatively little to water quality impairment as opposed to other land activities. According to EPA, forestry contributes, on average, only six percent of the loadings attributed to nonpoint source pollution. Beyond the “quantity” issues, there is also the issue of “quality”—and runoff from forests has been demonstrated to be much cleaner than from other types of land uses as well.

With regard to forestry, we ask you to move forward with extreme caution in any nonpoint legislation, to consider what approaches are working well now, and to avoid a Federal regulatory approach that will result in land-use planning.

First, we urge you to recognize the highly successful efforts already being made by those now implementing management measures, particularly in silviculture management.

State reporting requirements under Section 305(b), State best management practices and auditing programs, and EPA's Section 319 reports and studies conducted by the National Council of the Paper Industry for Air and Stream Improvement, all confirm forest management activities as a de minimis contribution to nonpoint source water quality impairment.

Many audits have been conducted to demonstrate the effectiveness of state forestry nonpoint control programs.

For example, Florida inspections indicate 94% compliance with BMPs, Virginia has achieved a 90% compliance, and South Carolina shows an 85% compliance. These rates have been achieved under existing programs and can be improved with additional education, outreach on the part of the states and the industry.

Notwithstanding these statistics, the forest industry is committed to further implementation of best management practices on all forested lands across the country.

Second, BMPs are, and should continue to be, developed on the basis of state-specific characteristics. AFPA generally supports the approach taken by the National Governor's Association (NGA) and the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), which calls for a state-based, “bottom-up” approach in developing and implementing BMPs.

Each state has its own unique circumstances of landownership types, land-use, state resources and program costs, existing state statutes and social/institutional characteristics.

Because all state programs reflect these characteristics, AFPA would oppose the concept of allowing EPA to establish “Program Implementation Criteria” in section 304 of the bill for all states based on the demonstrated success in only one state.

For example, Florida's new forestry BMP program, which I helped develop, was designed for Florida and would likely not work well in Idaho. Likewise, applying Pacific Northwest practices or implementation criteria to the Northeast, Great Lakes or South would not be reflective of these regions of the country.

Although the bill gives discretion to the Administrator through the EPA Regions to modify management measures to reflect special conditions “in the region,” we are concerned that this authority might be unworkable since even the geographical features within the States of the various regions differ greatly. States—not EPA—must have the flexibility to devise management measures to address their own special circumstances.

Third, any nonpoint source program should avoid prescriptive land-use planning. We are deeply concerned over the application of the water quality criteria and standards provisions of the bill to nonpoint sources. Implementing BMPs is one thing, but having the Federal government telling private landowners if, when, and where to harvest timber is inappropriate and unnecessary.

The antidegradation section in particular, requires designation of any water body within a national forest or any water of “exceptional recreational, cultural or ecological significance, including any that supports a population of threatened and endangered species,” would drastically affect our ability to harvest timber on millions of acres of federal and private land.

Under this bill, would the entire Columbia River system and all its watersheds be included as outstanding national resource waters? What about the St. Johns River that supports the endangered manatees or the Potomac which supports bald eagles? If so, what would be the consequences for land-based activities in those watersheds?

Would foresters, farmers and ranchers be required to modify their activities so as to protect existing uses, or in the case of water quality that exceeds standards, to maintain those levels?

Despite the implementation of management measures on lands adjacent to national resource waters, we believe timber harvesting in these watersheds could be effectively stopped on the grounds that operations were degrading water quality—even if small amounts of soil were discharged into the water as a result of the operations.

A situation such as this could make the ongoing controversy over the timber supply in the western United States pale by comparison—not only in the Northwest, but in many other parts of the country as well. These are very troubling issues for us and we would like to work with the Committee to address them.

AFPA's membership believes that the only practical and feasible method to protect water quality and ensure the protection of beneficial uses is through state-devised implementation of forestry BMP programs.

Finally, any new program should include effective management measures for all nonpoint sources. Identifying a small, select group of "easy targets" will not result in measurable water quality improvements and will only place a disproportionate burden on those covered in the program.

WATERSHED PLANNING

Watershed analysis and management concepts can provide useful tools for addressing regional and site specific water quality problems. Not only does substantial authority already exist in the Clean Water Act to implement watershed planning approaches, but activity is also occurring on a local level in nearly every part of the country.

While watershed analysis and management can be utilized by the states as a screening and coordinating tool to identify and address impaired waters, this section greatly expands watershed evaluation from in-stream water quality parameters to associated land areas including sensitive habitats, wildlife habitat and general land-use patterns.

Although the watershed provisions in S. 1114 are voluntary in nature, the planning requirements, which must be adopted by the states, raise the potential for land-use restrictions on private landowners. If watershed planning were used to impose federal land-use restrictions on landowners, such as restricting legitimate timber harvesting activities, or controlling residential or commercial development, businesses, private landowners, and their communities could be severely impacted.

The strict application of nonpoint source water quality criteria through a watershed approach is not appropriate to land use activities. To guarantee compliance with water quality criteria, given unpredictable weather events, natural background loads and to pinpoint causes and effects when many other activities are occurring both upstream and downstream, is not scientifically or technically feasible.

With each watershed containing potentially thousands of private landowners and facilities, the assignment of pollutant loadings becomes an extremely impractical and inefficient exercise in a given watershed, assuming loads could be fairly and accurately measured in the first place.

AFPA is also concerned about the Federal consistency provision which would require Federal agencies to carry out their activities in a way which is consistent with watershed management plans. For example, would this provision affect timber sales in national forests; any federal permitting activity, or affect the relicensing of small hydropower projects? If so, we would strongly object to its inclusion in the bill.

For these reasons, we urge the Committee to continue its review of the Act's current authority prior to S. 1114's modification later this year, as well as a review of the watershed management activities already underway, to see if less resource intensive and more practicable approaches can be taken.

CONCLUSION

In conclusion, Mr. chairman and Members of the Committee, AFPA appreciates this opportunity to share its views with you on these issues. AFPA has a strong interest in the development of the clean Water Act amendments. We look forward to working with you to develop sound policies that recognize existing authorities in the Act, and that address remaining water quality problems in the most efficient and least disruptive manner.

TESTIMONY BY WILLARD DE GOLYER, DAIRY FARMER, NATIONAL COUNCIL OF FARMER COOPERATIVES

Mr. Chairman and members of the Subcommittee, my name is Willard De Golyer, and I am accompanied by Dr. Stanley Weeks. We are pleased to testify today on behalf of the National Council of Farmer Cooperatives and appreciate the opportunity to share our views on reauthorization of the Federal Water Pollution Control Act.

I am president of Table Rock Farm, Inc., which I operate with my uncle, Calvin De Golyer. Our farm is located near Castile, New York, which is in Wyoming County, west of Rochester. We have a milking herd of 650 cows and plant 600 acres of corn and alfalfa, and are currently constructing a new milking facility and increasing the herd size to 850 milking animals. I also serve on the New York State Working Group on Dairy Manure Management and am a participant in the Animal Science Advisory Committee at Cornell University. We have been working for some time to implement environmentally beneficial best management practices in our operations, including improved manure handling systems. I am an active member of Agway Inc., our regional farm cooperative, and often turn to my cooperative for information and technical assistance on environmental concerns.

Dr. Stanley Weeks is Director of Agway's Farm Research Systems and Product Development, and he is an internationally recognized expert in the science of manure management. Among his many notable contributions is the development of a biogas systems approach to dairy manure management.

The National Council of Farmer Cooperatives (National Council) places a high priority on development and implementation of policies that maintain and enhance the quality of surface and ground water resources through effective management of NPS pollution from agricultural activities, where problems are identified, in a manner compatible with food and agricultural policy objectives.

Farmers and their cooperatives have a great deal at stake in the water quality policy debate. Farmers are directly impacted by both point source (e.g., livestock and poultry confinement facilities, etc.) and nonpoint source (NPS) pollution policies and requirements. Farmers are also impacted by the significant point source requirements placed on farm input manufacturing and food processing facilities owned and operated by their cooperatives. To the extent that incremental costs related to point source requirements translate into reduced earnings for the cooperative business, farmers are impacted either through reduced patronage dividends or a reduction in the value of their investment in the cooperative.

Our cooperative community is committed to playing a constructive role in the search for effective solutions. The National Council's comments today will be focused in particular on measures directed to agricultural NPS pollution, as proposed in Title III and other sections of S. 1114, the "Water Pollution Prevention and Control Act of 1993."

Our Environmental Policy Committee's analysis of toxic and point source measures contained in S. 1114 is still underway, and we expect to submit written comments on Title II, Title V and related sections for the Subcommittee's consideration in the near future.

INTEREST OF THE NATIONAL COUNCIL

Description of Membership:

The National Council is a nationwide association of cooperative businesses which are owned and controlled by farmers. The National Council represents about 90 percent of the nearly 4,500 local farmer cooperatives in the nation, with a combined membership of nearly 2 million farmers. National Council members handle practically every type of agricultural commodity produced in the U.S., market these commodities domestically and around the world, and furnish production supplies and credit to their farmer members and patrons.

- Cooperatives are in the important business of manufacturing and supplying farmers with fuel, fertilizers, crop protectants, feed, seed and other important farm inputs. Cooperatives supply about 40 percent of all fuel, fertilizers and other production inputs used by American farmers.
- About one-fourth of the fruits, nuts and vegetables on supermarket shelves, and ultimately on dinner tables, arrives there through the efforts of cooperatives.
- Cooperatives account for over three-fourths of the milk and a large portion of the cotton, wheat, feedgrains, oil seeds and rice produced and marketed in the United States.

Agway Inc.:

Agway Inc. is a cooperative owned by 91,000 farmer members in 12 northeastern states—Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, and Vermont. Agway is headquartered in Syracuse, New York.

Agway produces and markets crop needs and services, dairy & livestock feeds, farm-related products, pet food and supplies, and yard & garden products. Its operations are conducted by more than 7,000 customer-oriented employees. Agway is a major diversified business, with consolidated sales of \$3.3 billion last year. Internal and external subsidiaries are involved in food processing and marketing, energy products, leasing, insurance, and other businesses.

MANAGING AGRICULTURAL NPS POLLUTION

EXHIBIT 1 is a "Statement of Principles" endorsed by the National Council and other agricultural organizations, which we believe identifies the NPS challenge confronting agriculture and conveys important concepts which form the basis for effective solutions. The National Council's participation in the ongoing clean water policy debate is being guided in large part by these important principles.

Briefly stated, NPS pollution concerns involve trace levels of pesticides and nutrients (principally Nitrogen and Phosphorus) which are being detected in some water bodies at levels deemed to exceed acceptable levels under standards set by the Clean Water Act and other statutes. One of the potential sources of concern frequently cited is that of NPS pollution from agricultural operations (Note: Off-farm sources are also recognized in the debate, including septic systems, urban landscapes, natural vegetative decay, etc.).

In framing the policy debate about how to address management of NPS pollution from agriculture, a brief review of (1) roles of key agricultural inputs that are regarded as potential sources of pollution, and (2) elements that the National Council believes are key to their successful management may be helpful to the Subcommittee.¹

Nutrients and Crop Protection Chemicals Critical to Production Agriculture:

- *Nutrients* are basic building blocks that both plants and animals require in order to grow and survive. Natural soil nutrient replenishment processes include decay of organic matter, siltation (flood plains) and lightning and rainfall. Although *nitrogen* (N) is but one of 16 elements essential for plant growth, it is one of the most critical, in that yields are generally proportional to the amount of N available.
- Natural supplies of N and phosphorous (P) in the soil are limited, and can be quickly depleted. These nutrients must be replenished and often supplemented to achieve acceptable yields on a sustainable basis. A number of sources of *supplemental nutrients* are available to farmers, such as manure, crop rotations (legumes and green "manure" crops), commercial fertilizers, sludge, etc.
- Pesticides are *crop protectants* which comprise critical tools in the farmer's arsenal to supplement crops' natural defenses against a host of predators, competitors and diseases, which can cause major losses to the detriment of both farmers and consumers. Crops in the U.S. must compete with 10,000 species of insects, 1,800 different weed varieties, 18,000 species of fungi and 250 viruses. Even with effective use of all crop protection tools, nature's competitors typically cause a 25 percent yield reduction.

¹ EXHIBIT 2 is a white paper entitled "Crop Nutrients and Water Quality," which was developed under auspices of the National Council's Environmental Policy Committee in an attempt to address these two dimensions for nutrients. Major points are summarized in this testimony as they apply to both nutrients and crop protection chemicals.

- The judicious use of supplemental plant nutrients and crop protection chemicals has helped American agriculture realize a *doubling of yields* in the past four decades.
- As a result, agricultural producers have been able to respond to the growing food and natural fiber needs of an expanding population on reduced acreage, thus averting environmental pressures on more fragile lands that otherwise would be brought into production.

Ingredients to Successful Management of NPS Pollution from Agricultural Operations:

The National Council is sensitive to the need for American agriculture to be part of the solution in managing NPS pollution. We believe that the operative goal of any successful policy response is as follows:

To maintain and enhance the quality of surface and ground water resources through effective management on the farm and in the field of NPS pollution from agricultural activities where problems are identified, in a manner compatible with food and agricultural policy objectives.

Based on cooperatives' experience in working with farmer-members, American farmers are generally anxious to be a constructive part of the NPS pollution management solution. Speaking for my own family, we are firmly committed to being part of the solution.

However, given financial and other resource constraints in much of American agriculture, we cannot succeed alone. There must be a *shared burden*—a partnership—in responding. Farmers' basic needs are three-fold:

- Sound Information on what works;
- Technical Assistance in tailoring solutions based on site-specific best management practices; and
- Financial Assistance, particularly for more capital-intensive options.

Sound information is critical, as cooperatives can speak from long experience in that it is difficult to over-emphasize the importance of maintaining credibility. Farmers want good information on remedies that work. Not just their crop for that year, but often their livelihood and way of life, may be at risk. One has to be wrong only once to destroy farmers' trust for years to come, dealing a serious setback to NPS management programs, whether voluntary or mandatory.

Technical and financial assistance are geared to achieving actual results in the field, where the success or failure of any initiative to manage NPS pollution from agriculture will ultimately be determined. These results will be dependent upon recognition of the following interdependent factors:

- All nutrient sources can potentially cause NPS pollution, whether they exist naturally or are added to the soil; and therefore *all sources must be properly managed.*
- To reduce N and P contamination, a *systems policy approach* is needed to ensure that reductions in one source are not offset by increases in another. The systems approach requires careful examination of both ag and non-ag, as well as both point and nonpoint, sources.
- *Existing ag-environmental initiatives*, such as those implemented pursuant to the 1985 and 1990 Farm Acts, offer significant potential for managing NPS contamination. Unfortunately, insufficient or even no funding has been provided in many instances.
- Adoption of *Best Management Practices (BMP's)*—practices shown to give maximum productivity, input efficiency and environmental protection—holds significant potential to address nutrient contamination and, at the same time, help contribute to the financial viability of the farm enterprise. *Integrated Pest Management (IPM)* programs offer similar benefits for crop protection chemicals.
- *Time* is needed to evaluate the results of programs that are already underway—time for farmers to implement BMP's, and time for the environmental benefits to show up in water bodies.
- Finally, and perhaps most importantly, *farmers must be financially viable* to implement NPS pollution management programs.

S. 1114

While the National Council has significant concerns about specific provisions contained in S. 1114, the sponsors are to be applauded for making great strides in crafting comprehensive legislation whose conceptual approach on complex and potential

ly controversial issues is generally sensitive to the special needs and concerns of American agriculture.

In discussions with staff to date regarding specific concerns, the National Council has often found that upon clarification we may agree with the intent of provisions in question. However, we do feel that more work needs to be done to ensure that intent is clearly stated in such cases, and ultimately realized upon practical implementation.

In today's testimony, we would like to (1) express our understanding of the bill's structural approach to agriculture's role in managing NPS pollution; and (2) based on that understanding, identify issues of concern and offer recommendations, including the critical area of funding.

Title III's Structural Approach to Ag NPS Pollution Management:

Title III of S. 1114 recognizes the realities of resource constraints both in government and agriculture by targeting impaired watersheds. States are to take the lead, so that water quality management initiatives are undertaken by people at the local level who are in the best position to craft workable solutions. These are fundamentally important steps that we applaud and endorse.

Farmers not in targeted watersheds will not be required to implement water quality management plans. We would point out that many farmers outside of targeted watersheds will still be adopting BMP's voluntarily for economic and environmental reasons, as well as due to Conservation Compliance Plans (CCP's) required under the 1990 Farm Act, Coastal Zone Management Act (CZMA) provisions, etc.

State Planning. In general, states are given 2.5 years to classify water uses, identify and delineate problem watersheds and revise comprehensive management plans designed to achieve water quality standards. The plans are subject to EPA approval. Groups may seek additions to the list through a citizen petition process. These first steps represent an ambitious undertaking likely to require a substantial commitment of resources by state governments. Since subsequent stages involving agriculture hinge upon how these actions are carried out, we would be interested in states' view regarding whether there will enough time and resources to comply and avoid the more onerous default option.

First 5-year period. States are given up to three years in the first five year implementation period (starting 2 years after enactment) to work with farmers to develop and approve site-specific water quality plans. A state-designated agency is to work with individual farmers in the target watershed to develop site-specific BMP's. Participation equals farmer compliance. Participation presumably means implementation of the site-specific plan, not just approval. If a CCP is in place, the farmer has met requirements. Also, it is our understanding that a farmer could still implement a CCP to comply.

Second 5-year period. At the end of the first five years, states are to take a fresh look based upon upgraded monitoring data and determine whether water quality standards are being achieved. If not, a second stage triggers, with various sources of pollution (point and nonpoint), including agriculture assigned load additional reduction requirements deemed necessary to bring the watershed into compliance by the end of the second 5-year period. Watershed planning units would conform with U. S. Geological Survey delineations. Minimum state enforcement authorities would be strengthened to include injunctive powers.

Funding. To facilitate these steps, S. 1114 authorizes increased funding for Section 319, increased flexibility for use of Section 319 grants and dedication of a portion of state revolving funds (SRF's) for NPS investments. Authorization for Section 319 funding would increase to \$600 million by 1999. Up to 20 percent of \$3 billion annually in SRF funds could be used for NPS investments. It is unclear, however, whether farmers would be eligible or, if so, what criteria they would have to meet.

Issues and Recommendations:

The National Council believes that S. 1114 can evolve into a final product that can truly allow agriculture and cooperatives to be a partner in the effort to achieve national water quality objectives. Our concerns and recommendations that follow are directed to that end.

Site-Specific, Flexible, Coordinated. The sponsors of S. 1114 have indicated that the goals of water quality plans as applied to agriculture are (1) to be site-specific, (2) to be flexible, and (3) to be coordinated with other programs. The National Council concurs. Achieving these goals is essential to successful implementation, and we applaud the sponsors for that commitment. They are so important that we would urge they be specifically emphasized in key sections of the bill to ensure these goals carry through to the implementation process.

Coordination. S. 1114 provides that CCP's fulfill phase 1 requirements. We would recommend that the Subcommittee consider inclusion of other programs which represent credible water quality management efforts, such as CZMA, Chesapeake Bay, etc. Perhaps those identified in H.R. 2543 could serve as a useful point of departure.

Number of Farmers Impacted. Important to the issue of resource and time requirements is an assessment of how many farmers will fall into impaired watersheds. However, we do not yet know the geography of these watersheds; nor is there a clear indication of how states may use their discretionary power in designating uses. Furthermore, we do not know how many states will opt not to go the watershed route, with all farmers then subject to regulation. Without such information, our comments concerning adequacy of time frame and funding are necessarily constrained.

Funding Priorities.

If nonpoint source pollution is believed to be a major priority in achieving clean water objectives, are disbursements of available funds commensurate with that view?

About \$75 billion in federal, state and local funds have been contributed toward sewage treatment construction projects alone in the past two decades. By contrast, funding directed to managing NPS pollution has been minuscule; and at this juncture there are no initiatives evident that would alter this imbalance. Will the policy process ultimately generate resources—even if it involves redirection of existing allocations—for NPS pollution management commensurate with the challenge, as has been the case for municipal projects? The National Council looks forward to working with the Subcommittee as future deliberations focus on this important question.

While agriculture is supportive of efforts to maintain and enhance the quality of our water resources, we are concerned about the potential cost. This is because agriculture, unlike other industries, cannot readily pass on such increased costs in the form of higher prices. While some BMP's intended to manage NPS pollution will mean cost savings over the long run, many will represent increased costs of production. Even those that may reduce costs will in many cases pose major capital investments that may be beyond the financial means of the farmer.

For these reasons, we are pleased that the bill provides for increased funding and expanded authority for both the Section 319 and State Revolving Fund (SRF) programs to help offset and/or restructure such costs. Since grants are likely to be somewhat limited, we believe consideration should be given to establishing special loan guarantee programs to help farmers, cooperatives and other eligible borrowers obtain necessary financing for environmental improvements. Such a program would help stretch limited federal and state resources while serving to encourage a private/public sector partnership. It appears that S. 1114 moves in this direction, and we would like to work with the Subcommittee in exploring ways to make the program more effective.

The legislation's proposed authorization for Section 319 would essentially double present authorization levels, and that is welcome news. Still, compared with funds allocated to municipal sewage, the amount is de minimis by comparison, particularly when the bill targets NPS pollution as the "number one" priority in the reauthorization process. Unfortunately, while we will commit to supporting appropriations, funds appropriated have consistently lagged well below that authorized due to budgetary constraints; and we are concerned that this trend will continue.

The expanded eligibility of Section 319 to include some grant assistance for farmers implementing proven practices is a positive development, although the practical effect will likely be limited. We would urge that grants be more commensurate with the cost of some BMP's. For example, on the point source side, \$5,000 would make little difference in the decision, or ability, to install concrete or steel holding tanks for animal wastes. By contrast, significantly more assistance was made available to a number of farmers in the Chesapeake Bay, with positive results. We would urge the Subcommittee to explore potential environmental benefits of larger grants in selected circumstances.

Phase 1 Focus. The National Council interprets this legislation as promoting a partnership between federal/state government and the farm community. Our priority objective is to work with the bill's authors so that everything possible is done to achieve water quality management objectives in the first phase (first 5-year period as proposed), in the hope that as few farmers as practicable are subject to increasingly prescriptive and costly load reduction requirements that could result in the second phase.

Time Problems. In analyzing S. 1114, we are concerned that the prescribed time frames and commensurate funding levels are such that most if not all farmers are

likely to find themselves subject to phase 2 (second 5-year period) requirements regardless of their best efforts. We know of no similar outreach program that even begins to approach any sort of implementation success rate in the time frames proposed.

We question whether states will be able to meet the initial proposed deadlines, particularly since appropriations from the federal level intended to assist state efforts and on-farm implementation are likely to fall short of targets. Yet this would not relieve farmers of their obligations. The bill calls for states to work with farmers in target watersheds so that all have approved management plans no later than the end of the third year in phase 1. Experience would suggest that a large number of farmers won't have plans approved and implemented until near end of the first 5-year period at best.

There is generally a significant time lag involved between the adoption of BMP's and water quality improvements showing up in the monitoring data. We are concerned that even if all goes well in terms of timely implementation of BMP's on farms, the initial 5-year review will lead to a conclusion few water bodies are in compliance. This could lead to calls for mandatory programs.

We question how close to the end of the 5-year period monitoring data will be available for determination of progress toward compliance. Data could well predate implementation of BMP's pursuant to the Act.

These factors combined lead us to the unhappy conclusion that water bodies are unlikely to come into compliance in the first 5-year period. Only CCP's or other BMP's implemented earlier and independently of Clean Water Act requirements will be in place to yield desired results. Yet the deadline for CCP's being in place is 1995.

Time Frame Recommendations. A farmer failing to live up to the partnership proposed in S. 1114 is faced with penalties, including under injunction authority and other enforceable powers of the state. Yet what if, for example, states fail to work with farmers to accomplish approved management plans? The National Council would propose that the Subcommittee consider building in mechanisms to ensure that farmers are not penalized if other components of the government/farmer partnership fail.

The Subcommittee could build in time a lag reflective of (1) performance by states of their charge; (2) the availability of needed funding; and (3) time needed for BMP's to yield water quality results. It should be an operative goal that states are to be timely in working with farmers, so that farmers aren't penalized by tardy response on part of the state.

Section 304(e) Criteria. This section provides that the EPA, in cooperation with USDA, is required to establish animal waste management facility design guidelines. Farmers and others may submit facility plans to the EPA. Once approved by EPA and USDA, the plans are eligible for funding provided under Title VI. Also, USDA is authorized to provide technical assistance.

In general, the proposed animal waste management facilities program provides considerable opportunity to livestock producers to deal with NPS pollution. The legislation recognizes the responsibility of the federal government to provide financial and technical support to farmers to address the NPS problems identified and others.

It should be recognized that farmers have been installing animal waste management facilities for many years. Their primary motivation has been to address material handling problems. For example, winter weather conditions in the Northeast states make it nearly impossible for dairy farmers to make daily applications of manure on their farms. As a result, many Northeast dairy farmers have built animal waste management facilities to address this material handling problem.

To achieve NPS pollution benefits, it makes good sense for animal waste management facilities to be tied to a nutrient management or whole farm management plan. Such plans recognize the fertilizer value of properly stored manure. The animal waste management facilities can be designed for adequate storage taking into consideration appropriate timing of applications of the manure to farm fields based on the nutrient needs for crops that will be grown on those farm fields.

The National Council would offer the following recommendations to strengthen Section 304(e):

- Rather than require the EPA to establish facility guidelines, we would suggest that EPA be authorized to establish "performance" guidelines. This would allow for engineering flexibility to address individual farm situations while ensuring a consistent achievement of environmental objectives. For example, EPA could set as a performance guideline that there be no leakage of animal waste from a storage facility, with consultants and builders then required to ensure that

proper materials and construction techniques are used to meet that and other criteria.

- Over the past 20 years, the federal government has spent over \$60 billion to build sewage treatment plants to deal with human waste management concerns. A similar commitment to dealing with animal waste management has been virtually nonexistent. While the proposed legislation does provide funding in this direction, the federal commitment is extremely small, and eligibility criteria are very restricted. We would urge a greater financial commitment and would further recommend that eligibility criteria be expanded to allow for the use of federal funds to help pay for private sector technical assistance, biogas digester systems, and liquid-solid separator systems.
- We recognize that USDA alone, through the Soil Conservation Service, cannot serve the needs of all farmers. Farmers are increasingly turning to their cooperatives for assistance. We would recommend that the Subcommittee ensure that provisions for financial assistance include services provided by cooperatives to farmers. This would be consistent with current use of Section 319 funding which allows for municipalities to hire private sector consultants for technical advice and design of publicly-operated treatment works.

Specificity as a Potential Funding Barrier. We would urge the Subcommittee to be sensitive to the danger that requirements associated with access to grants/loans will become so prescriptive that they could unintentionally become barriers to funds needed for site-specific investments by preventing the much needed flexibility that the bill's authors recognize as necessary for site-specific planning. Furthermore, requirements associated with funding could mean that farmers would be forced to hire consultants or outside contractors, when perhaps by doing it themselves they might do the job at a far lower cost.

Costs for Regulated and Regulator. It is our understanding that the Office of Management and Budget (OMB) and the Congressional Research Service (CRS) have been asked to analyze the costs associated with this legislation, both for government and the regulated community. We urge timely completion of this analysis so it can be factored into assessment of the adequacy of proposed funding levels.

Consideration of Economics. The bill defines the term "management measures" as '*economically achievable* measures for the control of additional pollutants from existing sources and new sources . . .' (emphasis added). The National Council applauds the specific recognition of economics as applied to agricultural operations, particularly since there seems to be a general consensus that farmers must be economically viable to adopt BMP's. We would suggest that the term 'control' be replaced with the term 'management,' given the significant difference in legal connotation associated with each.

Citizen Petitions. The legislation would permit citizen petitions as a means of adding water bodies to states' target lists for action. Since S. 1114 provides for extensive public input into the initial decision process, we question the need for this second step. Although the petitions would have to meet certain criteria, they are unspecified. If the provision is retained, we would urge further clarification, at least in terms of criteria.

Volunteer Monitoring. The National Council understands and appreciates the provisions calling for volunteer monitoring. This is consistent with our view that creative means be sought to maximize available resources. In some instances, we could see where farmers and cooperatives would want to participate in the monitoring of their water resources. For example, agriculture in a given watershed may want to provide data more current than a state has the resources to generate to demonstrate water quality improvements due to recently adopted BMP's. It should be made clear that farmers and cooperative personnel would be eligible to participate in volunteering monitoring programs.

In order to assure maximum utility of this resource, the National Council would urge the Subcommittee to direct the EPA to develop criteria for types and quality of data that would be suitable for consideration by states. Otherwise, data of inconsistent or poor quality could be misused, with scarce resources misdirected as a result.

Use Designations. S. 1114 provides the opportunity for states to develop their own use designations, according to water bodies' intended use, with the default being the Clean Water Act's fishable/swimmable standard. The National Council strongly endorses this approach.

Water Quality Standards. The National Council remains concerned that provisions calling for *biological monitoring, conversion of narrative to quantitative standards* and related matters could have the unintended result of more stringent standards, subjecting more watersheds and farmers to potential regulation, and triggering more stringent and costly requirements than intended.

For example, does biological mean looking at native species as a signal for taking a closer look at other indicators? If so, what criteria would be utilized in selecting the water body/ecosystem as a reference point? Could the provision be used to introduce sensitive, non-native species as an environmental indicator that could trigger regulatory or enforcement action?

Staff has responded by indicating that such provisions are intended to augment, not elevate, current standards. While refining existing standards may be appropriate, we would like to continue working with the Subcommittee to thoroughly examine these provisions, with modifications and additional clarification as necessary to ensure that current standards are indeed enhanced and not elevated.

New Sources. Agriculture is appropriately excluded, except for construction of significant animal feeding facilities.

Guidelines and Handbook. To ensure that needed flexibility is retained during implementation at the local level, the Subcommittee should work to ensure that these general references are not used as rigid, prescriptive criteria.

Giving BMP's Time to Work. We would urge that S. 1114 make it clear that one reasonable conclusion during evaluation regarding NPS pollution load reduction requirements is that water quality standards can be achieved if BMP's already implemented are given more time to work.

Potential Politicization of Phase 2. Part of the National Council's desire to see phase 1 (first 5-year period) be successful is based on uncertainty over how phase 2 will operate. In addition to not knowing how stringent requirements will be, we are concerned about politicization of the process envisioned where all sources in a watershed are to get together and "agree" about what sources are contributing how much to the problem, and how much load reduction each is required to contribute. With one-half of the value of agricultural production in Standard Metropolitan Statistical Areas (SMSA's), or in counties immediately adjacent to SMSA's, urban-oriented politics could force scientifically unmerited burdens on agriculture.

Watershed Delineation. Senate staff has indicated that the intent is to require that watersheds under phase 2 conform to the USGS definition. We support this intent and urge that staff ensure this is clearly stated in the bill.

"Good Actor" Philosophy. The Subcommittee faces a critical philosophical choice in its search for policies that will achieve nonpoint source pollution management objectives on the farm. Should the emphasis be on "command-and-control," with imposition of solutions reinforced by penalties? Or should the emphasis be upon voluntary, incentive-based measures? We are pleased that the sponsors of S. 1114 have selected the latter path, and we would urge the Subcommittee to build upon that beginning.

There may well be a place for both approaches over the long term. However, at this stage in the process, the National Council would strongly urge that the latter approach be used as the framework for policies targeting nonpoint source pollution and agriculture. The emphatic message being sent to cooperatives by their farmer-members is that they are aware of NPS pollution concerns being raised by others and directed toward agriculture, and that they are anxious to be part of the solution, in ways that allow them to remain in business and deal with the complexities of agriculture and natural processes.

We respectfully submit that far more environmental gains for funds invested will be achieved by seeking a partnership with the overwhelming majority of farmers who are willing to respond, especially in light of likely financial shortages and the uncertain and highly variable nature of NPS management responses. In seeking to impose requirements at this juncture on farmers who may be regarded as "bad actors," one risks alienating the willing population, and diverting disproportionate funds away from education and assistance to enforcement. The superfund debacle, with most funds going to attorneys instead of to cleaning up sites, is an experience not to be repeated in the water quality arena.

Citizen Suit Exemption. The National Council strongly supports the exemption provided for in S. 1114 for farmers from citizen suit authority in Title III. We would caution that if citizen suits were to carry over to lenders instead, the unintended effect could be to dry up farmers' access to funds.

Enforceability. States are required to have an enforceable provision, with injunction power in phase 2. Does injunction power mean that the state can shut down a farm operation? It is not clear whether this power is regarded as a first or last resort. We would recommend that the provision be dropped or if retained make it clear this significant power is to be used only as a last resort.

Innovative Solutions Need to Be Explored. Recognizing that there will never be enough resources needed to accomplish important water quality objectives, the National Council would urge that creative and flexible alternatives be explored, rather

than imposing costs of mandated regulatory solution on farmers. For example, the EPA has done some good work on pollution trading that may be applicable to agriculture.²

ONGOING COOPERATIVE ENVIRONMENTAL INITIATIVES

A number of innovative initiatives, principally built around environmentally beneficial Best Management Practices (BMP's) and Integrated Pest Management (IPM) programs, are already underway, with promising results, as illustrated in part by the summary of a 1989 member survey contained in EXHIBIT 3. We are aware of a number of additional new programs that have been initiated since the survey was conducted.

Cooperative Research Efforts:

We in the Agway system are particularly excited about developments in animal manure management at our research facility that we believe offer the potential to contribute a great deal in responding to water quality challenges. The Agway Farm Research Center was first opened in 1967. Today there are nearly 500 tillable acres and a 500 head registered Holstein herd. In addition to being a working laboratory for testing Agway products, Dr. Weeks and his team of researchers have tested and demonstrated BMP's in both crop and dairy operations.

Agway is also a member of Cooperative Research Farms (CRF), an organization made up of 12 cooperatives throughout the U.S., Canada and France.³ These cooperatives pool research facilities, knowledge and dollars to maximize benefits to farmer-members, including in the environmental arena. This multi-cooperative effort means that information on such advances, both at our research farm and those of other cooperatives, can often be of benefit nationally and internationally. While the foundation for the effort is animal feed research, with CRF members representing combined sales in excess of \$4 billion annually, research farms include environmental and other objectives in their systems-oriented approach.

Agway's Biogas Systems Approach to Manure Management:

One successful project under the stewardship of Dr. Weeks may be of particular interest to the Subcommittee, as it highlights the fact that environmental solutions on the farm are rarely simple, but instead require a systems approach that often must take into account seemingly unrelated factors before hoped for results can be achieved.

Dr. Weeks' team has worked for a number of years on the challenge of handling manure on a working dairy farm, looking for alternatives to enhance more traditional approaches. As they went up the learning curve, they came to realize that any workable solution must begin with the cow and consider all facets in the dairy operation, including nutritional needs, barn temperature, the farmer's pocket book, and even the cow's creature comforts. The biogas system that they have developed can, under the right circumstances, turn a dairy farmer's environmental challenge into a cost-effective energy and revenue source, while at the same time yielding important water quality and other environmental benefits.

Agway is continuing to make significant progress in working to make the system more cost-effective and compatible to a wider range of operations. Dr. Weeks is available to provide further details and respond to any questions. Furthermore, Agway would be pleased to provide a personal tour for any members or staff who would like come to our research farm and take a closer look.

COOPERATIVES AS PART OF THE SOLUTION

The National Council wishes to emphasize a strong desire to work with the Subcommittee in developing policies that enable American agriculture and the farmer cooperative community to be an effective and active part of the NPS pollution management solution. We applaud the strong beginning that S. 1114 represents in ap-

² EPA, "Administrator's Point/Nonpoint Source Trading Initiative Meeting—A Summary, EPA 841-S-92-001, August 1992.

³ CRF members are Agway Inc., Syracuse, NY; Countrymark Cooperative, Inc., Indianapolis, IN; Atlanta, GA; GROWMARK, Inc., Bloomington, IL; Land O'Lakes, Inc., St. Paul MN; Southern States Cooperative, Inc., Richmond, VA; Tennessee Farmers Cooperative, La Vergne, TE; Co-op Atlantic, Monton, New Brunswick, Canada; Cooperative Federee de Quebec, Montreal, Quebec, Canada; Federated Co-operatives Limited, Saskatoon, Canada; Gold Kist, Inc. UCAAB, Chateau Thierry, France; United Co-operatives of Ontario, Mississauga, Ontario, Canada.

plying the principles that we believe are required for American agriculture to be an effective part of a successful water quality program.

Comments offered today on S. 1114 are intended to move this important policy document closer to the goals that we share with the Subcommittee. Proposed improvements are based on our best understanding to date of the bill's provisions. Our Environmental Policy Committee's Water Quality Legislative Task Force is continuing to analyze S. 1114's individual provisions, as well as how they might ultimately interact when implemented on the farm. As our understanding improves, so too hopefully might the value of additional observations and suggestions.

If the National Council could leave this Subcommittee with one lasting impression from our testimony today beyond our specific suggestions for improving S. 1114, it is that agricultural cooperatives are uniquely positioned to be part of the solution. Cooperatives work in partnership with the farmers and ranchers who are their member-owners as they strive to address NPS pollution and other environmental challenges.

Farmer cooperatives are a prominent and integral part of this nation's agricultural landscape and culture. Farmers began banding together through cooperatives early in this century, combining their individual limited resources to address both input and marketing challenges as a means of helping them remain viable as farmers. Although specific needs may have changed greatly over the years, this role remains the basic charge of cooperatives.

Today, four out of five farmers belong to one or more cooperatives. Cooperatives by definition are self-help organizations. In the search for water quality solutions, cooperatives offer an invaluable outreach capability.

This Subcommittee is already painfully aware that resources at the federal and state level, as well as in agriculture, are far too scarce to accomplish all that we might like in the water quality arena by starting from scratch. Our earlier comments underscore this reality. Thus, we would urge that the Subcommittee look for means of augmenting and energizing existing resources and outreach systems, such as those in cooperatives. Incremental investments in such systems could yield tremendous environmental benefits more quickly than might otherwise be possible. Toward this end, we have offered a few suggestions in this testimony regarding cooperative resources and hope to identify other opportunities as the process moves forward.

In closing, the National Council stands ready to work with the Subcommittee in advancing water quality legislation that brings to life a true partnership between agriculture and government in responding to NPS pollution challenges. Dr. Weeks and I are available to respond to any questions members of the Subcommittee may have.

SUMMARY

The National Council of Farmer Cooperatives believes that the operative goal of successful agricultural NPS pollution management policy is to maintain and enhance the quality of surface and ground water resources through effective management on the farm and in the field of NPS pollution from agricultural activities where problems are identified, in a manner compatible with food and agricultural policy objectives.

There must be a shared burden—an agricultural/government partnership—in responding. Farmers' basic needs include sound information on what works; technical assistance; and financial assistance to achieve site-specific BMP's.

S. 1114 is comprehensive legislation whose conceptual approach on complex and potentially controversial issues is generally sensitive to the special needs and concerns of American agriculture. It is targeted to impaired watersheds; places states in a lead implementing role; and relies on site-specific BMP's.

The National Council recommends that S. 1114 be strengthened to encourage timely agricultural adoption of BMP's in impaired watersheds. Evaluation of progress should be compatible with implementation of key program components.

Specific recommendations include (1) increase funding through Section 319 and SRF targeted to agricultural NPS pollution management initiatives, with expanded eligibility; (2) allow sufficient time for programs to work before conducting evaluation that could trigger imposition of more stringent provisions on agriculture; (3) link agricultural accountability to performance on part of states and funding levels; (4) ensure flexible guidelines in Section 304 program and funding eligibility manure management systems contributing to enhanced water quality; (5) make certain that biological monitoring and conversion of narrative to numerical standards accomplishes intended goal of refining, and not increasing, existing water quality stand-

ards; and (6) maintain the bill's focus on directing limited resources to "good actors" in agriculture as the primary means of achieving NPS pollution management objectives.

One example of how farmer cooperatives are uniquely positioned to be part of the solution is Agway's biogas systems approach to managing dairy manure. Cooperatives work in partnership with the farmers and ranchers who are their members-owners as they strive to manage NPS pollution. S. 1114 should be strengthened to take advantage of resources offered by the cooperative system.

The National Council stands ready to work with the Subcommittee in advancing water quality legislation that brings to life a true partnership between agriculture and government in responding to NPS pollution challenges.

EXHIBIT 1

PRINCIPLES STATEMENT OF THE CLEAN WATER ACT WORKING GROUP CLEAN WATER ACT REAUTHORIZATION

In the reauthorization of the Clean Water Act, Congress should adhere to the following principles:

1. The Clean Water Act (CWA) does not stand alone in protecting America's waters from nonpoint source (NPS) pollution. Other ongoing programs at the federal, state and local level must be funded fully, coordinated with and not superseded by the CWA. This includes, in particular, the soil conservation and water quality provisions of the 1985 and 1990 farm acts and the state groundwater and surface water protection programs of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
2. Recognizing the 20-year commitment our country has had to eliminating point-source pollution, success in reducing the more complex and diverse NPS pollution will require similar time and resource commitments. However, management of this problem will require a different approach than that of point source pollution elimination because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities.
3. The central focus on NPS management solutions should be a reasonable and voluntary approach based on incentives, education and technical assistance as the primary means of managing NPS pollution.
 - NPS pollution management program should (a) emphasize the protection of water resources and state-designated water uses, including state-designated agricultural uses, and (b) recognize the importance and needs of individual agricultural producers and other landowners affected by the CWA.
 - This approach emphasizes the use of locally designed and applied, economically feasible, site-specific best management practices which do not infringe on private property rights. Implementation of these farm management options over a realistic time frame will further the goal of reaching or maintaining designated uses of water bodies.
 - It is inappropriate to link USDA commodity, conservation or disaster program payments to the success or failure of management programs for NPS pollution authorized under the CWA.
4. Current CWA language contains valuable provisions for NPS management embodied in Section 319. Although this NPS section has been historically underfunded and has been hampered by bureaucratic roadblocks, all states now have approved Section 319 assessments and approved management programs. Within the CWA, it is the preferable vehicle for management of NPS pollution, and changes which occur during CWA reauthorization should reinforce these existing NPS provisions.
 - The proper management of NPS pollution lies in state and local efforts. As such, states should continue to identify and resolve their priority NPS water problems through administration of Section 319 funds. With state oversight and approval, local organizations should continue to carry out these NPS programs. Agencies at the federal and state levels should harmonize objectives and coordinate funding for national and regional NPS management programs.
 - State and local programs should provide for a mix of research, development, education and technical and financial assistance for both planning and implementing actions aimed at achieving state designated uses.

5. Management efforts funded by Section 319 of the CWA should be directed to priority areas based on scientific assessments that identify water bodies with impaired or threatened uses.
 - Priority, as determined by states, should be based on the magnitude of risk to human health, the protection of designated uses, and likelihood of further significant and unreasonable water quality degradation if no action is taken.
 - Strategies should be developed on a hydrologic unit, watershed-wide basis using an approach that includes the consideration of both surface and ground water quality.
 - Programs should focus on cost-effective, site-specific practices for individual operations with flexibility for implementation.
 - In order for Section 319 to work effectively for agriculture, USDA must play a lead role in the delivery of education and technical assistance at the state and local level.
6. An effective and cost-efficient response to water quality problems requires accurate and reliable information on (a) the source, extent, and impact of NPS pollution, as well as (b) the effectiveness, utility and economic feasibility of conservation measures and best management practices.
 - Any Clean Water Act reauthorization should include a strong financial commitment to further research, monitoring and assessment projects.
 - Monitoring should include before and after sampling as well as frequent sampling during storm events and assessment of natural and historic loadings.
 - Scientific research and monitoring projects should follow protocols developed by the US Geological Service and should be conducted on a watershed basis with local and state input.
 - Representative pilot projects aimed at achieving market based incentives on a watershed or regional level should be encouraged.
7. The Clean Water Act Reauthorization should not directly or indirectly create a federal water quality law or program which supersedes, abrogates or impairs state water allocation systems and water rights.
8. Section 319 management programs on federal lands should be developed and implemented by the specific agency statutorily charged with management of the lands in question, rather than by regulatory authorities independent of that agency.
9. It is inappropriate for a reauthorization of the Clean Water Act to provide the authority for citizens suits against individuals participating in NPS management programs.

ENDORISING ASSOCIATIONS: AMERICAN FARM BUREAU FEDERATION; AMERICAN FEED INDUSTRY ASSOCIATION; AMERICAN FORESTS & PAPER ASSOCIATION; AMERICAN NURSERYMEN; AMERICAN SHEEP INDUSTRY ASSOCIATION; AMERICAN SOYBEAN ASSOCIATION; THE FERTILIZER INSTITUTE; NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION; NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS; NATIONAL ASSOCIATION OF STATE DEPARTMENTS OF AGRICULTURE; NATIONAL ASSOCIATION OF WHEAT GROWERS; NATIONAL BROILER COUNCIL; NATIONAL CATTLEMEN'S ASSOCIATION; NATIONAL CORN GROWERS ASSOCIATION; NATIONAL COTTON COUNCIL; NATIONAL COUNCIL OF FARMER COOPERATIVES; NATIONAL FARMERS UNION; NATIONAL MILK PRODUCERS FEDERATION; NATIONAL PORK PRODUCERS COUNCIL; NATIONAL TURKEY FEDERATION; NATIONAL WATER RESOURCES ASSOCIATION; U.S. RICE PRODUCERS.

EXHIBIT 2

CROP NUTRIENTS AND WATER QUALITY

INTRODUCTION

Detection of crop nutrients (principally nitrogen and phosphate) in ground and surface water supplies has been a mounting public concern. Research indicates these compounds come from numerous sources, both natural and man-made, and the primary sources of contamination are not yet known. Nonetheless, the use of nitrogen and phosphorus fertilizers in agricultural production has led to increasing public scrutiny of farmers and farm production practices.

The National Council of Farmer Cooperatives (NCFC) represents more than 2 million U.S. farmers and the cooperatives they own. Nearly 50% of the nation's farmers purchase fertilizer through cooperatives. In addition, farmers (through their cooperatives) own approximately 25 percent of all commercial fertilizer production capacity.

The purpose of this report is to discuss non-point source (NPS) pollution of ground and surface waters, the factors involved, and recommendations for addressing the problem. The report is divided into the following sections:

- Executive Summary
- The NPS Problem
- The Role of Crop Nutrients in Agriculture
- The NPS Solution

EXECUTIVE SUMMARY

The NPS Problem

- There are many potential sources of nitrates and phosphates in water, such as decaying organic matter, manure, atmospheric lightning, commercial fertilizers, and septic tanks.
- Evidence on the scope of NPS pollution is most prevalent for nitrates. The EPA's National Survey of Drinking Water Wells found 1.2% of community wells and 2.4% of rural wells contain nitrate in excess of EPA standards.
- Environmental concerns from nitrogen and phosphates center on eutrophication—stimulated growth of algae in surface waters. Both nutrients can cause eutrophication.
- For human health, nitrate concerns center on "Blue Baby Syndrome," a condition affecting infants. However, no cases have been reported in recent years, and national health organizations no longer keep statistics on it.
- Phosphates pose few, if any, known threats to human health, according to scientists.
- Potassium, another major crop nutrient, generally is not a health or environmental concern.

Role of Crop Nutrients in Agriculture

- There are 16 essential elements for plant growth. Nitrogen and phosphorus (along with potassium) are the elements used in the largest quantities.
- The natural supply of these elements in soil in forms available to plants is limited, and must be supplemented to maintain crop growth and productivity for a wholesome, abundant, reasonably priced supply of food.
- Many sources of supplemental nutrients are available, such as manure, sludge, commercial fertilizers, and crop rotations. Whether natural or manmade, all can potentially cause NPS pollution and all must be properly managed.
- Commercial fertilizers offer numerous benefits to both producers and the environment. Advantages include the capability to measure, time and place nutrients for maximum plant uptake and benefit, and thereby minimize groundwater leaching and erosion runoff.

The NPS Solution

- To effectively manage nitrate and phosphate contamination, a systems policy approach is needed to ensure that reductions in one source are not offset by increases in another. The systems approach requires careful examination of both ag and non-ag, as well as both point and non-point, sources.
- For new ag-environmental policies to be effective, producers will need sound information, as well as technical and financial assistance to implement desired practices. If government makes NPS the focal point of water policy, government funding needs to reflect this change.
- Recent ag-environmental policies, such as those of the 1985 and 1990 farm bills, have significant potential for addressing NPS contamination. The problem is little or no funding has been provided in many instances. Moreover, time is needed to evaluate the results.
- Adoption of Best Management Practices (BMPs)—practices shown to give maximum productivity, input efficiency and environmental protection—has significant potential to address nutrient contamination, and, at the same time, ensure the financial viability of America's highly efficient and productive farm sector.

Specific Recommendations

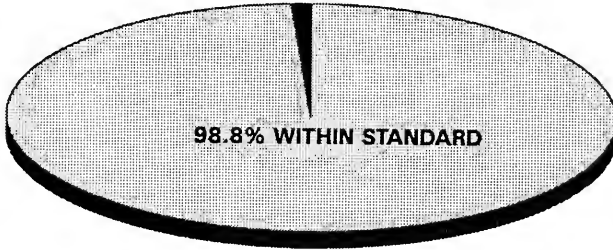
1. The numerous ag-environmental programs adopted in recent years need to be properly structured and administered, and fully funded in order to reduce NPS contamination and mitigate the need for additional policy responses.

2. If new water quality programs are developed, farmers must be provided with sound information and additional financial resources to adopt site-specific BMPs.
3. New policy proposals must be cognizant of imposing additional costs on farmers. In light of large cuts in farm support programs in recent years, farmers have extremely limited capital resources. Farm programs may see additional cuts in the near future.
4. Any new policy proposals must be designed to ensure maximum environmental protection at minimum cost. New programs should make ample use of provisions such as pollution credits and trading between point and non-point nutrient sources, to allow affected parties maximum flexibility in meeting specific water quality goals.

PERCENTAGE OF WELLS THAT CONTAIN NITRATE IN EXCESS OF THE STANDARD

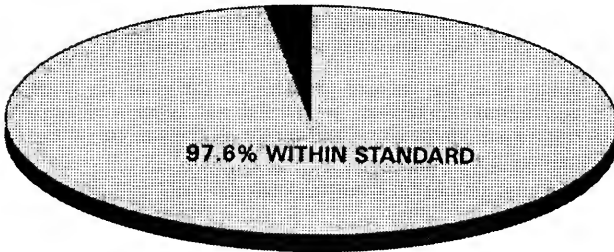
COMMUNITY WELLS

1.2% EXCESS



RURAL WELLS

2.4% EXCESS



THE NPS PROBLEM

Nitrates can potentially pose a threat to human health, but no incidents have been reported in recent years. Both nitrates and phosphates can cause eutrophication, damaging surface water bodies. There are many potential sources of both nutrients in water.

- For nitrogen, sources include:
 - decaying organic matter
 - manure/sludge
 - atmospheric lightning
 - commercial fertilizers
 - legume crops/immature grasses
 - septic tanks.
- For phosphate, major sources include phosphate-containing detergents, natural sources, and farm inputs (manure, commercial fertilizer, etc.).
- All nitrogen sources—both organic and inorganic—can leach nitrates into ground water systems or, through soil erosion, convey nitrates into surface waters, such as lakes and rivers. All phosphate sources potentially can contaminate surface water bodies. Because phosphate binds tightly to soil, it is generally not a ground water risk.
- Potassium, another major crop nutrient, creates no known quality problems for surface waters, and generally does not pose a contamination problem for ground water systems (CAST, 1992).

SCOPE OF THE NPS PROBLEM: NITRATES

EPA Water Well Survey (Ground Water)

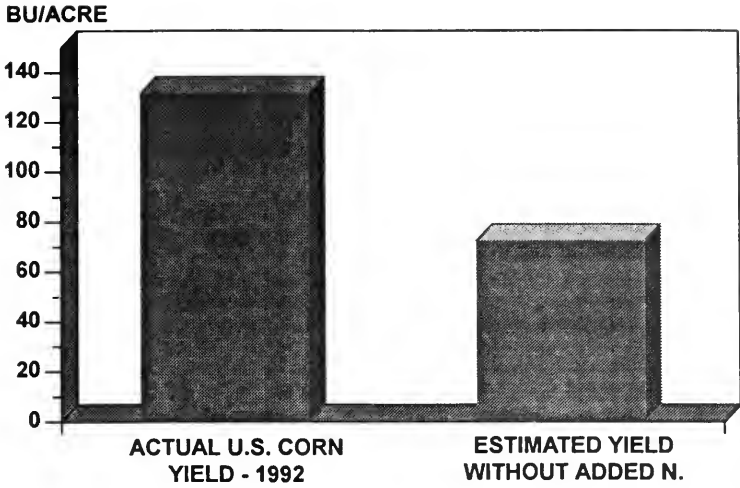
- The National Survey of Drinking Water Wells conducted during 1988-89 estimated about one-half of the nation's wells contained traces of nitrate (NO₃), but the vast majority were below the maximum contamination level of 10 parts per million (ppm) nitrate as N.
- EPA found nitrate in excess of the standard in 1.2% of the nation's community wells and 2.4% of rural wells.

Des Moines River Study (Surface Water)

- The Leopold Center for Sustainable Agriculture at Iowa State University found that nitrate levels in the Des Moines river were nearly as high in 1945 as for 1980-90.
- The study shows that the nitrate problem in the river significantly pre-dates the use of commercial fertilizers, which did not become widespread until the 1960s. The results are particularly important as Iowa is one of the largest states for fertilizer use.

Specific health and environmental concerns include:

- Eutrophication
 - Eutrophication occurs when algae growth is stimulated in surface water bodies.
 - Nitrogen and phosphorus can contribute to eutrophication. Phosphorus is an essential (and generally lacking) nutrient in the growth of algae.
- "Blue Baby Syndrome" (Methemoglobinemia)
 - Digestive tracts in infants up to 6 months of age are naturally low in acid. When coupled with excessive consumption of nitrates, this can prevent proper oxidation of infant blood cells, and lead to Blue Baby syndrome.
 - Modern society has virtually eliminated Blue Baby risk. From 1947-49 (*long before significant agricultural use of commercial fertilizers*), Minnesota reported 139 cases and 14 deaths, attributed to high nitrate levels in farm wells. Since 1960 only one case has been reported in the nation. The cause was a shallow farm well located too near a septic tank system and barnyard.
 - Because occurrences are so rare, major U.S. health organizations (National Institute of Health, National Center for Disease Control) no longer keep statistics on it.
- Few, if any, adverse human health effects have been linked to exposure to high levels of waterborne phosphates (Klaassen, 1986).



SCIENTISTS ESTIMATE U.S. CORN YIELD WOULD BE CUT BY MORE THAN 40 PERCENT WITHOUT SUPPLEMENTAL N.

THE ROLE OF CROP NUTRIENTS IN AGRICULTURE

Crop nutrients are essential to agriculture. Commercial fertilizers are an important source of nutrients, offering farmers several environmental and economic advantages. However, fertilizers are only one nutrient source, and all sources must be managed to minimize NPS.

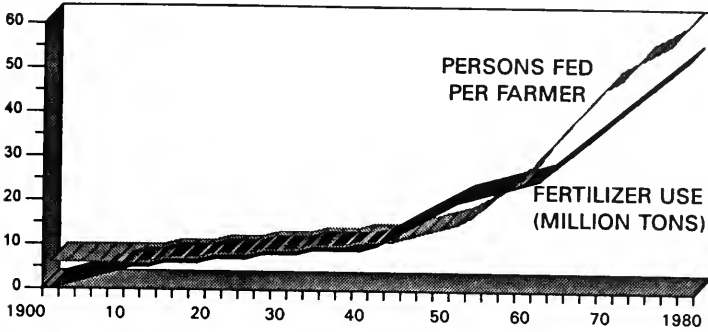
There are 16 essential elements for plant growth. Nitrogen and phosphorous (and potassium) are the elements used in the largest quantities.

- Nitrogen is *the* most essential crop nutrient, playing a key role in cell division and raising protein content. It is the nutrient most frequently deficient in agricultural soils.
- Phosphorus, although not required in large quantities, is also deficient in some soils. Phosphorus is essential for cell division, photosynthesis, utilization of sugar and starches, and energy transfer.

The limited supply of these nutrients in the soil must be supplemented. Many sources of supplemental nutrients are available, and whether natural or manmade, all are potential NPS contaminants.

- To maintain farm productivity and a plentiful, reasonably priced food supply, modern agriculture requires the addition of crop nutrients. Without supplemental nitrogen, corn yields, for example, would fall 40 to 50 percent (Hoeft, 1990).
- Before the advent of modern agriculture, too often the soil was "mined" of its naturally occurring nutrients and then abandoned.
- Between the introduction of crop hybrids and the use of fertilizer, U.S. corn yields, have increased nearly 250% since 1950. Wheat yields have climbed almost 150%.
- Curtailing the use of supplemental nutrients would reduce productivity and could draw environmentally sensitive lands into production, boosting soil erosion and worsening the NPS problem.
- Commercial fertilizers are just one component—albeit an important one—in nutrient management. Other important sources of supplemental nutrients include legumes, manure, crop rotations, green manure, sludge, and numerous others.
- All sources have equal potential to contribute to NPS pollution.

U.S. FOOD PRODUCTION CAPABILITY AND FERTILIZER USE



SOURCE: THE FERTILIZER INSTITUTE, 1982

When used properly, commercial fertilizers can provide environmentally sound, economically efficient nutrients for crop production.

- Commercial fertilizers are man-made, but the chemical interaction with plants is *exactly* the same as an organic product such as manure. Fertilizers are produced from, and break down into, naturally occurring compounds.
- Commercial fertilizers offer many important advantages, including the capability to measure, time and place nutrients for maximum plant uptake and benefit. In that way, fertilizer use can minimize groundwater leaching and erosion runoff.
- Commercial fertilizers are economical, providing farmers with crop nutrients at relatively low cost—particularly in terms of capital and labor costs.
- Animal manure and sludge can be productive elements in nutrient management but must be carefully managed, particularly as they pose special challenges for NPS pollution: In addition to nitrate and phosphate, these sources can spread microbial diseases in waters (CAST, 1992).

THE NPS SOLUTION

New programs to deal with NPS should be multifaceted, involving systems-based policies, sound information, technical and financial assistance for producers, and further development and promotion of Best Management Practices.

The systems policy approach is needed to ensure reductions in one source are not offset by increases in another. The systems approach requires careful examination of both ag and non-ag, as well as both point and non-point, sources.

- The systems approach means that the agricultural production process must be examined in its entirety when developing and implementing specific policy actions.
- A non-systems approach—policy that focuses on reducing one or two specific sources—could, unintentionally, increase use and contamination from other sources, leaving overall contamination unchanged or even worse.
- Non-system policies that dramatically reduce agricultural productivity—e.g. policies that restrict nutrient use and reduce crop yields, or that require excessive rotations and reduce overall farm output—could easily push production onto more erosion prone, environmentally sensitive lands.

In rural areas, improving ground water systems requires addressing nitrates from non-ag sources.

- According to the Council on Environmental Quality (1980), home septic systems are a larger source of ground water contamination than farming. Septic systems release nitrate by design.
- Septic systems remain the primary sewage control method in most rural areas (Perkins, 1984).
- EPA estimates 25% of the housing units in the U.S. are served by some 22 million septic units (1986).

For new policies to be effective, producers will need sound information, as well as technical and financial assistance to implement desired practices.

- New policies, developed to reduce ag-related NPS, must focus on farmers as the target audience, and must be designed accordingly.
- If NPS is the policy focus, resources must be reprioritized. At present, the vast majority of government resources is allocated to addressing contamination from point sources.
- Investment in research and education will be needed to develop new technologies/practices that minimize agriculture's contribution to NPS, and to assist producers in incorporating new technologies on individual farms.
- In order to implement new practices, farmers must be economically viable. Additional resources will be required to support new practices, particularly if large-scale implementation is expected.
- Farmer cooperatives are already working with producers, promoting environmentally beneficial practices, and stand ready to further assist with the adoption of new, proven technologies/practices. Cooperatives play a unique role in agriculture and are well positioned to facilitate adoption.

Recently-adopted ag-environmental policies have significant potential for reducing contamination of ground and surface waters. The problem is that only partial funding has been provided. Moreover, time is needed to see results.

- The 1985 Farm Bill contained a number of important environmental provisions, and the 1990 Farm Bill went even further. Important non-farm bill programs have been initiated as well.

- Policy objectives have centered on
 - reducing soil erosion and runoff
 - maximizing efficiency of input usage
 - promoting Best Management Practices—environmentally safe, sustainable, economically efficient practices.
- Many of these programs have received little or no funding since being passed. For some, regulations have not even been promulgated.
- Even the best funded programs are relatively young, and their impact on water quality is only beginning to be seen.

Adoption of Best Management Practices (BMPs) has significant potential to address nutrient contamination. A BMP system requires total integration of all inputs into the system and is inherently site specific.

- BMPs are those practices that are already proven in research and tested through farmer implementation to give optimum production potential, input efficiency and environmental protection.
- A BMP system involves both conservation and agronomic practices.
- According to the Council for Agricultural Science and Technology (1992), research studies indicate that nutrient and other non-point source contaminants are reduced by implementation of BMPs.
- Increasingly, farmers are looking to extension personnel from land-grant universities, as well as numerous USDA agencies, to gain information on BMP technology and how to apply it to their farms.

THE NPS SOLUTION: SPECIFIC RECOMMENDATIONS

1. The numerous ag-environmental programs adopted in recent years need to be properly structured and administered, and fully funded in order to reduce NPS contamination.
 - USDA programs must be coordinated, to gain maximum environmental benefit.
 - Education and promotion programs should be developed to ensure farmers are aware of program goals, requirements, and benefits.
 - Evaluation systems should be implemented to determine which are most environmentally effective and economically efficient for both taxpayers and farmers.
 - Fully funded, these programs can substantially mitigate the need for additional policy responses.
2. If new water quality programs are developed, farmers must be provided with sound information and additional financial resources to adopt site-specific BMPs.
 - Proposals should encourage, through economic incentives, the use of BMPs—rewarding farmers for good soil stewardship and sound crop management.
 - Research and extension programs should be a major part of any new proposals, to develop, demonstrate and promote BMP technology.
 - BMP technology is inherently site-specific, because of differences in soils, growing seasons, weather patterns, etc. To reflect this, BMP research should be “bottom up” in nature, incorporating significant farmer input.
3. Policy makers must be cognizant of imposing additional costs on farmers.
 - Farmers are short on resources, especially capital resources, in the face of large cuts in farm support programs in recent years. Farm programs may see additional cuts in the near future.
 - The farm population continues to decline, and additional, policy-related cost pressures could cause a precipitous drop in population.
 - Even small cost increases could spell financial ruin for a large number of producers.
4. Any new policy proposals must be designed to ensure maximum environmental protection at minimum cost.
 - New programs should allow affected parties maximum flexibility to meet environmental goals, making ample use of provisions such as pollution credits and trading. This flexible, market-based approach (like that contained in the 1990 Clean Air Act) has been shown to be effective, from an environmental as well as a cost perspective.
 - Pollution trading and credits should be allowed among both point and non-point sources.

- Numerous successful market-oriented policies have been used by state and local governments to combat water quality problems, as demonstrated by North Carolina and New York City.

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APPENDIX: AG-ENVIRONMENTAL POLICIES

Agricultural Water Quality Protection Program (1990 Farm Bill)

- Participants must follow Best Management Practices consistent with a USDA-approved water quality protection plan, which includes reporting input usage, and conducting soil and tissue tests for each year of the 3 to 5 year agreement.
- Producers receive incentive payments of up to \$3,500 per person, per year; cost-share assistance of up to \$1,500 per person, per contract; and technical assistance in developing/implementing plans.
- Farm program payment yields and acreage bases are protected on enrolled acreage.
- Eligible lands include:
 - well-head protection areas
 - land deemed critical as per section 319 of the Federal Water Pollution Control Act
 - areas of shallow Karst topography where sinkholes allow runoff to directly enter ground water supplies
 - other areas identified as environmentally sensitive by EPA, USDA, and the Departments of Interior or State.
- When created, the AWQPP's goal was to enroll 10 million acres by 1995, but lack of funding makes it questionable as to whether the program will meet that target.
- What little funding the program has received has come from other USDA conservation programs.
- At this date, USDA is unable to say exactly how much acreage is enrolled.

Conservation Reserve Program (1985 Farm Bill)

- The CRP was designed to remove highly erodible land from agricultural production for 10 years. Enrolled acreage must be planted to a USDA-approved cover crop or trees/shrubs.
- Participating producers receive annual "rental" payments from USDA and cost-share assistance.

- The goal for total CRP enrollment is 40-45 million acres by 1995. (Significant acreage considering total principal crop acreage last year was 319 million acres.)
- Enrollment in the CRP has gradually increased to the current 36 million acres.
- With changes made via the 1990 Farm Bill, the CRP has an increased environmental focus. Explicit goals now include improvement of ground and surface waters.

Wetlands Reserve Program (1990 Farm Bill)

- Designed to return farmed or converted wetlands back to a wetland environment.
- Participants must agree to long term easements. Easements can be permanent, for 30 years, or the maximum allowed under applicable state laws.
- Similar to CRP, producers receive annual "rental" payments from USDA.
- Enrollment goal is 1 million acres by 1995. Current enrollment is approximately 50,000 acres.

Conservation Compliance (1985 Farm Bill)

- Requires all farmers with highly erodible land to develop USDA-approved conservation plans designed to minimize soil erosion and runoff.
- Implementation must be completed by January 1, 1995.
- The 1990 Farm Bill expanded potential penalties for violating conservation compliance. Farmers violating the provision could be denied virtually all USDA payments/benefits.
- Approximately 40% of U.S. farmers, and 140 million acres, are affected.
- Less than 2% of highly erodible land is not covered by a compliance plan.
- To date, approximately 60% of plans have been implemented.

Environmental Easement Program (1990 Farm Bill)

- Purpose is to reduce the impairment of water quality and provide long term protection of environmentally sensitive lands.
- There is no acreage mandate for the program.
- Long term easements will be offered to landowners through 1995.
- Eligible lands include:
 - acreage enrolled in the CRP that is likely to return to production after the CRP contract expires and would pose an environmental threat
 - areas containing riparian corridors
 - environmentally sensitive areas that would be in violation of State or Federal environmental goals if cropped.
- Participants agree to implement a natural resource conservation management plan, recorded deed restrictions, and permanently retire any existing base and/or allotment history.
- Participants receive 100% cost sharing for establishing conservation measures, and easement payments for up to 10 years. Payments can total up to \$250,000.
- Because no funding has been appropriated, USDA has not accepted any acreage into the program; in fact, USDA has not even promulgated program regulations.

President's Water Quality Initiative (1989)

- Directs USDA to implement research program to develop new farming systems designed to protect ground water.
- USDA to set-up nationwide demonstration projects promoting various cropping, nutrient/pesticide management, and tillage practices for improved water quality.

Section 6217, Coastal Zone Management Act (1990)

- Goal is to restore and protect coastal waters.
- Each of the 35 states and territories with coastal waters will be required to develop NPS pollution control programs.
- EPA, USDA and other state and federal agencies are currently in the process of developing program guidelines.

Section 319, Clean Water Act (1987)

- Requires states to submit a report to EPA that identifies state waters not meeting water quality standards because of NPS pollution; identifies general and specific nonpoint sources; describes methods for identifying effective BMPs to combat problems; and identifies programs for controlling NPS.
- States are required to develop management plans to address identified NPS pollution problems.

- Implementation of the program has been slow, as little funding has been provided. While all states have now filed assessment reports and management plans, the plans have not yet been approved by EPA.

EXHIBIT 3

SURVEY OF COOPERATIVE ENVIRONMENTAL INITIATIVES ¹

SUMMARY

Farm supply cooperatives were surveyed concerning Promotion of BMP's. Of a population of 25 regional supply cooperatives that the survey was mailed to:

- 18 regional cooperatives informed their local cooperatives of fertilizer BMP's through a variety of means (training courses & seminars, written materials, etc.), using information obtained from USDA, universities, trade associations and their own research efforts. ² Most of the training programs were certified by state agencies.
- 10 cooperatives provided soil test kits to locals. Most indicated that soil tests are free if fertilizer is purchased as a result of tests.
- 12 cooperatives had names for their program promoting BMP's, and 9 had hired agricultural experts to implement the program (others used current employees or hired contractors). 13 regionals worked with the media to promote BMP's.
- 20 regionals indicated their locals inform farmer-members of BMP's, and assist farmers in determining the fertilizer application rate best suited to safeguard the environment and maintain production efficiency. Locals made use of computer models, soil testing, plant tissue analysis, historical application rates and advice from the regional cooperative.
- Of 11 regionals providing estimates on the percentage of farmer-members utilizing BMP's, 8 indicated greater than 50 %, including 4 exceeding 90 %.
- 9 regionals conducted research on fertilizer application rates, including 5 on BMP's; 8 were involved in an experimental farm program. 15 provided financial assistance for university research on BMP's.

Twenty cooperatives primarily engaged in food processing and marketing responded to a parallel survey on *Promotion of IPM Programs*:

- 15 regionals informed locals of IPM techniques, based on information obtained from a variety of government, university and in-house resources. 4 had certified IPM courses. 11 had names to promote their program. 7 cooperatives had hired experts to implement their IPM program.
- 14 regionals indicated their locals review IPM techniques at meetings with farmers.
- 18 regionals assisted farmers in determining pesticide application rates best suited to safeguard the environment and maintain production efficiency.
- 9 cooperatives conducted research on IPM; and 10 provided financial support for university research on IPM.

STATEMENT OF JUDY OLSON, VICE PRESIDENT, NATIONAL ASSOCIATION OF WHEAT GROWERS, GARFIELD, WASHINGTON

Mr. Chairman and Members of the Subcommittee:

My name is Judy Olson, and I am vice president of the National Association of Wheat Growers. My husband and I have raised wheat, barley and lentils in the Palouse region of Washington State for the past 20 years. Today I am also speaking for the American Soybean Association, National Barley Growers Association, National Corn Growers Association, National Cotton Council, and the U.S. Rice Producers Group.

¹ These partial results were derived from analysis of a member survey developed through a joint effort with the USDA Agricultural Cooperative Service and conducted by the National Council in 1989. The National Council assumes sole responsibility for the interpretation of results as presented.

² The reference to "regionals" and "locals" involves organizational structure of cooperative businesses and warrants brief explanation. Generally speaking, while some regional cooperatives are *centralized*, with farmers belonging directly, others are *federated*—i.e., farmers (several hundred to several thousand) are typically members of "county" locals, and locals in turn are members of the regional. Either structure can encompass anywhere from a few counties to a number of states.

I appreciate the opportunity to comment on the nonpoint source title of S. 1114, and those provisions which we feel are of the most direct importance to agriculture.

The goal of improving watershed planning is a central feature of the proposed legislation, and we agree that better identification of impaired watersheds and development of a strategy to manage sources which have been specifically associated with impaired water quality is essential. Where this is already occurring, and where agriculture has been specifically related to water quality impairment, farmers have been willing participants in watershed projects.

Projects established under the Rural Clean Water Program (RCWP) and USDA's Water Quality Initiative exemplify high levels of farmer participation in cooperative problem-solving efforts. The RCWP, administered by the U.S. Department of Agriculture in consultation with the U.S. Environmental Protection Agency, was initiated in 1980 as an experimental effort to address agricultural nonpoint source pollution in 21 watersheds across the country. Most RCWP contracts began in 1980-81 and ended in 1986. Landowner participation was voluntary, with cost sharing and technical assistance offered as incentives for implementing best management practices. In order to achieve water quality goals established for the watersheds, the required level of best management practice (BMP) implementation on cropland was set by the agencies at 75 percent of the critical area encompassing major pollutant sources—and in all 21 projects this goal was met or surpassed.

Preliminary analysis of participation in the 74 nonpoint source "hydrologic unit area" projects established under USDA's Water Quality Initiative indicates similar participation rates. For example, the Godfrey Creek project in Gallatin County, Montana has 80 percent of the area within the watershed under contract to install recommended BMP's for dairy farming and irrigated cropland. Education and technical assistance were jointly provided by USDA's Cooperative Extension Service and Soil Conservation Service, and cost-sharing made available through ASCS. These agencies have longstanding working relationships with farmers, and a record of successful outreach.

These high levels of watershed project participation lead to two very important conclusions: (1) voluntary, incentive-based programs are successful when correctly administered; and (2) it is not necessary that specific practices be in place on 100 percent of the watershed area in order to achieve significant water quality improvement. The immediate objective of nonpoint source programs, we believe, should be aimed at involving the majority of landowners within impaired watersheds—not necessarily 100 percent. Participation should be encouraged on the basis of technical assistance, education and cost-sharing.

Changes in farming practices in my own area add further support to these conclusions. In the Palouse region of Washington State, where we farm on extremely hilly terrain, farmers have been progressively implementing new practices voluntarily to reduce soil erosion and improve water quality for over 30 years. Following the original enactment of the Clean Water Act in 1972, the Washington State Department of Ecology endorsed a locally developed series of water quality BMP's for farmers in the Palouse, including "divided slope" farming to reduce runoff. Since that time, 200,000 acres in Whitman County are farmed according to the recommended practices. In addition, a regional research and technology transfer project known as STEEP was instituted in the mid '70's, and the project has resulted in the voluntary adoption of minimum-till and no-till systems on over half the acres in Whitman County, where we farm. As a result of these "technology and knowledge transfer" projects and official recommendations by local authorities, every one of the farmers in our area has adopted at least one of these management practices.

In rice producing areas, management practices to improve water quality have also been voluntarily adopted by most farmers. As a result of practices recommended by the Texas A&M University system for the production of rice, most farmers in Texas are holding irrigation water in their fields long enough so that any fertilizers and chemicals that are used in production have degraded or dissipated and other dissolved solids are less than when the water entered the fields. Similar practices are being followed by rice producers elsewhere in the United States.

It is our strong belief that if projects like these were adequately funded, expanded and coordinated with ongoing 319 programs in states, farmers would be enabled to make the management changes necessary to address nonpoint problems identified with agriculture. It is also our belief that more BMP's will be installed at much less cost to both government and individuals under cooperative programs than under enforceable programs which require a policing mechanism. Education is a much better buy than a police force. Funding for the multi-year, 21 watershed RCWP totaled \$64 million, and BMP's were installed on 730,000 acres of cropland. It should also be

noted that many of the projects focused on animal waste containment facilities, which are very costly.

Cooperative projects such as these engage the vast majority of farmers who are "good actors" in watershed management, rather than focusing on the "bad actor". In fact, it has been my observation that those individuals sometimes described as "bad actors" more often than not turn out to be late joiners rather than nonparticipants. A successful watershed project with positive participation from the majority tends to overcome negative attitudes and resistance from conservative individuals who find it difficult to make changes. Cooperative projects also tap the traditional community loyalty that is typical of rural life without relying on threats to achieve positive goals for the community.

Inadequate resources account for the inability of many states to fully activate nonpoint source management strategies. Making adequate resources available to states to develop and implement their 319 programs is essential to achieving the goal of improving watershed planning and involvement of landowners—the "stakeholders" in the watershed. A very important provision of S. 1114 is the substantial increase in the authorization for nonpoint source program funding. It is essential that these increased funds be directed toward improving technical assistance and education programs in the states, and that grants be made available under the State Revolving Fund to individuals to assist them in implementing management practices which are designed to meet the requirements of the legislation.

The ingredients of a successful watershed planning effort are good understanding of the nature of any impairment, defining suitable management practices that will be necessary to address the problem, and aggressive outreach to landowners to ensure their understanding of the problem and the role that they must play in addressing it. We believe that many of these ingredients are provided for in S. 1114, particularly increased funding to states to improve planning, assessment and outreach. The site-specific approach to BMP design for existing sources and requiring economic achievability are also very important.

We believe that local watershed planning authorities, including the state department of agriculture, land grant university agricultural specialists, and local SCS and Extension Service experts are best suited to the task of assessment, site-specific BMP design, and landowner outreach. Each farm operation has unique soil and climatic conditions, in addition to economic conditions which dictate many management decisions which farmers must make. Site-specific BMP's tailored to local conditions can best be designed by technicians and researchers who have a working knowledge of the region. We do not believe that the federal EPA should overshadow this effort by publishing a handbook which local watershed managers must reference when matching farming systems to the water quality objectives of the watershed. Farming according to a national handbook is simply not workable and the handbook called for in the legislation would defeat the purpose of site-specific planning and local problem solving.

Farm law requires farmers with highly erodible land to implement a conservation plan designed and approved by the Soil Conservation Service by 1995. The plans were developed in accordance with the SCS "Field Office Technical Guide". In some instances the Guide and SCS technicians have offered a suitable selection of practices from which the farm operator may choose, but in other instances planning has been inflexible. Farmers can expect an EPA handbook to be a far more inflexible "guide" to farming.

Other means for EPA to maintain effective oversight over state management programs would be more productive, and have already been identified by the agency itself: These include requiring states to do a better job of reporting their progress in meeting program goals and requiring more consistency among state plans.

Importantly, the legislation recognizes the relationship between SCS-approved conservation plans and water quality improvement. Since conservation plans are designed to minimize runoff, the legislation provides for them to satisfy water quality requirements within an impaired watershed for a 5-year period. We are very pleased that the achievements of conservation plans have been recognized, given the enormous efforts and costs that farmers have taken on in order to comply.

However, since plans will not be fully implemented until 1995, they should be given more time to show results. We believe that ten years, rather than five, would be a fairer time frame for allowing conservation plans to satisfy watershed BMP requirements. It has been shown in Rural Clean Water Program and other NPS projects that runoff reduction resulting from BMP installation can sometimes not be quantified in terms of water quality improvement for a period of many years, even though the BMP may be the best available technology. It would be unfair and bur-

densome to require new efforts of farmers before the efforts they are already making have been given a chance to work.

Five years is also an inadequate period of time for watershed planners to assess nonpoint sources and develop appropriate BMP's for landowners in the watershed. And it is not an adequate amount of time to allow citizens to respond to problems that are made known to them and for which they are assigned responsibility—in many cases for the first time—within the framework of a fully functioning cooperative watershed project.

As the watershed planners develop BMP's for the watershed, they should be demonstrated to landowners, and the landowners should be given adequate time to respond and participate in the watershed project. The legislation emphasizes the importance of watershed planning and local "ownership" of watershed projects, and we couldn't agree more. But this philosophy must be made practical with realistic time frames for states and individual citizens to respond to a new federal mandate.

Thank you very much, Mr. Chairman, for your consideration of our views. We appreciate the efforts made by you and the committee to address water quality concerns in the proposed legislation, and we look forward to cooperating with the committee in finalizing a sound nonpoint source strategy for the nation.

TESTIMONY OF PAUL GENHO, CHAIRMAN, PRIVATE LANDS AND ENVIRONMENTAL MANAGEMENT COMMITTEE, NATIONAL CATTLEMEN'S ASSOCIATION

The National Cattlemen's Association is the national spokesman for all segments of the beef cattle industry—including cattle breeders, producers and feeders. The NCA represents approximately 230,000 cattlemen. Membership includes individual members as well as 46 affiliated state cattle associations and 29 national breed associations.

Good morning. My name is Paul Genho, and I am currently Chairman of the National Cattlemen's Association's (NCA) Private Lands and Environmental Management Committee. I am also a rancher from the state of Florida.

NCA appreciates this opportunity to provide testimony before the Senate Environment and Public Works Committee, Subcommittee on Clean Water, Fisheries, and Wildlife, regarding re authorization of the Clean Water Act (CWA). NCA represents approximately 230,000 cattle producers nationwide through 75 affiliated state cattlemen's and national breed organizations. This issue is a priority to NCA members, who earlier this year ranked CWA reauthorization among their top priorities.

Cattlemen across the country are vitally interested in this re authorization of the CWA. There has been no other CWA re authorization, or other federal statute for that matter, which potentially could have such pervasive impact on land and water uses which are fundamental to agriculture. Cattlemen own and manage land which encompasses over half the U.S. land mass; land which exists in widely varying geographic settings and therefore is exposed to numerous climatologic and geologic occurrences. This wide variation in climate and topography makes land management decisions in the state of Florida very different from those management decisions made in other portions of the country. For this reason, broad land use planning provisions made on a national level can be very effective in one locality, but be completely inappropriate for other areas. NCA would urge this subcommittee to keep these local and regional climatological variations in mind as the CWA re authorization proceeds.

The beef cattle business is affected by the CWA in a number of ways. For example, the 635 million acres of privately owned grazing land represents the predominant land use in watersheds across the country. According to USDA, over 85% of U.S. beef cattle raised in feedlots are finished in feedlots which are required to be permitted as point sources of pollution under Section 402 of the CWA. Furthermore, many cattle producers utilize wetlands, during drier months of the year, for haying and grazing. Although Section 404 contains an exemption for agriculture from permitting requirements, many of these producers have been required, and often denied, permits for this beneficial, maintenance use of wetlands. The recently promulgated regulations under the Coastal Zone Management Act prescribe a "one size fits all" approach to non point source (NPS) pollution. By EPA's own estimates, the cost of this NPS approach to the private sector in this narrow band of coastal areas (735 counties) is expected to be at least \$500 million. As stated earlier, this nationwide approach will not provide an effective, cost-efficient means of reducing NPS pollution in these areas, let alone throughout the rest of the country. At the present time, ranchers and farmers across the country are operating under state developed

and driven Section 319 plans which, if given adequate time and resources, could prove to be very effective in reducing NPS pollution.

NCA has been actively involved in the re authorization of the CWA for a number of years. Most recently, we have worked as part of a coalition of over twenty agricultural and conservation organizations to develop a Statement of Principles regarding re authorization of the CWA. This document, attached for your review, outlines those provisions of NPS policy which are necessary for a workable and cost effective CWA re authorization. NCA would urge the Committee to review these Principles, and incorporate those provisions into any CWA re authorization measure.

NCA appreciates the leadership of the Senate Environment and Public Works Committee in drafting legislation for CWA re authorization, S. 1114. NCA has found a number of positive provisions embodied in S. 1114, such as:

A) efforts to ascertain the quality of all "waters of the United States". This is a key provision of any CWA re authorization measure and will, for the first time since the CWA has been introduced, provide an accurate assessment of the quality of surface waters nationwide.

B) expansion of water quality monitoring to a continuous, five-year cycle. This provision enables states to more accurately assess and establish trends for water quality improvements.

C) addressing the management of water pollution from a watershed approach and targeting those watersheds with a demonstrated water quality impairment.

D) recognition of current, ongoing agricultural programs and site specific plans which are expected to protect or improve water quality.

E) the recognition for increased funding levels as necessary for improvements of the NPS section of the Act

F) recognition of states ability to best direct pollution reduction efforts.

NCA appreciates the consideration given to States ability to direct water quality protection. However, there are sections throughout S. 1114 which may undermine the efforts of states by requiring extensive EPA oversight. The provisions in question include:

A) dictating federal numeric criteria for water quality standards.

B) promulgating federal guidance for NPS management measures developed by the States.

C) translating narrative water quality standards to numeric standards based on federal criteria.

D) allocating loadings and potential load reductions among each perceived source of pollution.

E) expansion of priority waters to include "outstanding national resource waters" and undefined "sensitive aquatic and wildlife habitats" as determined by EPA. These determinations are best made by states.

F) development of targeted watershed areas and watershed plans to protect water quality, which must be approved by EPA.

G) establishing strict allocation regimes for NPS funding at state level.

H) federal approval of site-specific plans.

I) requirements of federal agencies who manage lands to seek EPA approval.

NCA's testimony submitted today will address this legislation in a number of areas, including:

Water Quality Standards/Criteria

Non Point Source Provisions

Timing/Funding

Watershed Planning

Enforcement/State Deference

NCA is also planning to submit written testimony at a later date to this Committee regarding point source issues and wetlands law reform.

WATER QUALITY STANDARDS/CRITERIA

The water quality standards section of current law would be greatly expanded by the inclusion of criteria for sediment quality, numeric concentration limitations for toxic pollutants, and by adding "pathogens or indicators of pathogens (or both), pH, oil and grease". Many of these pollutants are typically naturally occurring. Unfortunately, these natural, historic loadings are not considered. When numeric criteria are established for these pollutants and loadings for a particular water body exceed this criteria, natural loadings may well be the culprit. Without recognition for these historic levels, non point sources of pollution will shoulder the blame and be required to mitigate the pollution problem. For this reason, the establishment of numeric loadings for individual waterbodies, while workable for discernible point

sources, are unreasonable for discrete nonpoint sources. Also, when water quality standards are frequently revised (every three years), they are potentially made more stringent with each revision. NPS will continue to be targeted as the source of these pollutants, further hampering the ability of landowners to make long term management decisions which will protect water quality for the future.

Criteria for "at a minimum, nutrients, suspended solids, and dissolved oxygen" are to be developed within three years. Once again, these are naturally occurring constituents which are only pollutants when agitated by nature or man. Additionally, EPA has plans to develop sediment quality criteria for no fewer than 8 constituents (including PCB's and dioxins). This federal approach for establishing standards and criteria will become the norm, where states, strapped for resources, have no other choice but do adopt stringent federal standards as their own state standard.

States are required to make a number of changes to their water quality standards and designated uses, especially as they pertain to the current triennial reviews. These changes include requirements that states designate uses for all water bodies within their jurisdiction, "as well as numeric water quality standards necessary to support these uses. EPA will provide oversight to these changes, and will designate as "fishable/swimmable" the water bodies in any state which does not establish designated uses. NCA feels that deference should be given to states as they establish uses and the water quality standards necessary to support these state designated uses. The federal role appropriate for this section should include federal support for these efforts, rather than create a program dictated by EPA.

The anti degradation policy included in Title II is problematic, not only because it prevents activities in those waters which exceed established water quality standards, but also because it would go back almost twenty years (November 28, 1975) to establish instream water uses. Once again, the burden of proof for this provision remains with the state, rather than states dictating the standards. Furthermore, the opportunity for relaxation of the anti degradation standards will simply pit point source dischargers against NPS in each watershed. Point sources are allowed to discharge to impaired watersheds, as long as non point sources are subjected to "enforceable best management practices pursuant to Section 319". This provision will create economic and political battles between point sources and non point sources which will not result in water quality improvements.

To prevent this type of infighting, NCA would suggest that states are most appropriate to implement anti degradation programs. These programs should include provisions that recognize that when a discharge is allowed, the state water quality program in place shall assure that point source and non point source programs are available to protect existing state designated uses.

The designation of "Outstanding National Resource Waters" has also been greatly expanded. Not only is the criteria for this designation being expanded, but also the dictates upon states to restrict use of these lands. These lands must also meet the strict anti degradation standards discussed above (zero degradation). This is not based on any failure to attain water quality. Rather than being allowed to identify protections necessary to maintain water quality, States are allowed only to decline an "Outstanding National Resource Water" designation. In the case of federal lands, this must be done with the concurrence of the federal lands manager. States must allow for any citizen to petition for the addition of a water designated as such, but the legislation does not contain a provision for the states to veto this listing. In order to effectively identify and protect those areas needing this designation, the delineation of an area as an "Outstanding National Resource Water" should be left to the states. Designations under this section shall be based on waters with real risks for losing designated uses. Broad categories, such as all waters within national forests, shall not be considered "Outstanding National Resource Waters", unless they have demonstrated an impairment of state designated uses. Any water body designated as an "Outstanding National Resource Water" shall be limited to the boundaries of the designation: upstream and downstream uses shall not be considered.

WATER QUALITY MONITORING

NCA appreciates the recognition this Committee has given to the need for continuous monitoring of water quality for all "waters of the United States". Additionally, the five year monitoring cycle proposed in S. 1114 provides a more realistic time frame under which States can effectively assess the quality of waters within their jurisdiction.

NCA is concerned that, as stated in this legislation, States must assess and quantify the contribution of various sources of pollution as part of their watershed planning process. This requirement will, for the first time, quantify and allocate loadings and mandatory load reductions upon all sources, including NPS. This approach

is unworkable, given the additional burden already placed on states to monitor water quality, identify boundaries of watersheds, and establish water quality standards for each water body. Furthermore, the requirement that allowable discharges for point sources be dependent upon the presence of enforceable NPS provisions will simply pit the economic and political power of point sources against non point sources.

The bill also provides for States to draw water quality data from a number of sources. While other data may currently exist, NCA would question the value of this data if the accuracy and consistency of the data were not compatible with protocols established under state water quality collection regimes.

S. 1114 also provides for the establishment of a Water Quality Monitoring Council directed by the President to provide coordination of Federal and State water quality monitoring programs. NCA would urge this committee to consider that landowners and other water users, who are ultimately responsible for water quality protection, be represented on this Council. NCA also has concerns that this Council may neglect the differences between states as they develop coordinated federal programs and advice for the President.

The premise of comprehensive watershed management is supported by NCA as a means to achieve reasonable water quality standards which protect state designated uses. NCA would caution the Committee regarding the approach taken under these provisions of S. 1114. By including ground water, outstanding national resource waters and sensitive aquatic or wildlife habitat areas (which are undefined), as special categories under these comprehensive plans, the legislation greatly expands the scope of required land management activities. NCA would emphasize to this Committee that these decisions are best made by states. Furthermore, the idea that "any public or nonprofit entity" may be considered as the management entity for watershed management plans, without some level of landowner input, creates a real opportunity for abuse.

The key provisions of the watershed plan also include broad, undefined parameters such as "potential uses" of waterbodies, "living resources" and "sensitive habitats" supported by the waters, perceived "threats" to impairment of water quality, and also an effort to allocate pollutant loadings among sources. As stated earlier, the allocation of load reductions to specific sources is, by the nature of NPS runoff, difficult if not impossible to quantify. It is important to identify sources of pollution, but any means to quantify the contribution of these specific sources will be impossible without comprehensive monitoring at the edge of housing subdivisions and agricultural fields across the country. The quantification and allocation of pollutant loadings, in order to support specific numeric water quality standards, will not be a workable solution for comprehensive watershed management. States should be deferred full authority to identify appropriate site specific plans which protect state designated uses of waters.

The limitations provided for point source dischargers by this section will create conflicts between all perceived sources of pollution in a watershed. S. 1114 provides for permitted discharges into an impaired water body only if the watershed plan includes enforceable requirements under State or local law over the non point sources in the same watershed. The flexibility of land owners to make management decisions to effectively protect water quality is lost by requiring these enforceable measures.

IMPAIRED WATERS IDENTIFICATION

NCA appreciates the efforts of the Committee to target limited resources to those watersheds with known impairments. This philosophy represents a good start by focusing limited resources on areas designated by states to need additional protection, but quickly creates an opportunity where states may lose control over their programs. This can occur in a number of ways, such as the ability of EPA to add to this list waters considered to be threatened with impairments, outstanding national resource waters, and any other water EPA deems necessary for special consideration. The result is a shift in determining the urgency for consideration from a basis of water quality impairments to broad and undefined parameters. Also, citizen petitions should be based on real water quality impairments, and states should have the authority to veto these petitions based on insufficient demonstration of water quality impairments.

Additionally, biological monitoring should not be considered the sole grounds for inclusion on this listing of impaired water bodies. Biological standards should be left to states, in order to determine what standards are appropriate and where these locally derived standards may best be used. Standards for NPS pollutants should be locally based to take into account natural levels of NPS pollutants.

NON POINT SOURCE CONTROLS

NCA appreciates the consideration given landowners by recognizing options for the development of site specific plans, but would caution the Committee to not undermine these efforts by establishing federal guidelines as minimums. The effectiveness of these site specific plans are rooted in their local design, not by virtue of meeting federally established criteria. The time frame outlined in S. 1114 is such that EPA will only reiterate the guidance for the Coastal Zone Act Re authorization Amendments, rather than creating a new, more appropriate document which recognizes differences in climate and topography from state to state. NCA supports deference to states in identifying appropriate NPS management programs as the basis for an effective water quality protection program which is also cost efficient.

Provisions in S. 1114 for those states who choose to not develop watershed management plans adversely impact landowners, not the states. The net result of this proposal would be to require landowners to meet federally established minimum management measures. The only alternative for landowners is to develop site specific plans, which must once again be approved by EPA. Either way, the decision by a state to avoid comprehensive watershed management will adversely affect landowners, rather than states. NCA urges this Committee to refocus it's penalties upon States, not landowners.

S. 1114 currently triggers compliance measures by being located within an "impaired" watershed. Efforts should be made to define impaired areas as those areas which do not currently support existing state designated uses. If a state designated use is not precluded, the water body is not impaired. Broad habitat protection efforts should not be considered.

Congress and EPA should recognize the progress made by States and landowners within states toward water quality protection. Although the current Section 319 program has been historically underfunded and has been given inadequate time to demonstrate its effectiveness, all states currently have in place 319 management plans. Furthermore, the most recent water quality assessment data was collected in 1990 and is inadequate for evaluating the effectiveness of what may have been accomplished to date in terms of gains in water quality. Point sources of pollution have been given twenty years and untold billions of dollars to correct their problems. NPS should be given like consideration.

NCA is currently conducting a research program to assess the accuracy of current state and federal water quality assessments, as well as identifying the level of activities on the part of landowners and state agencies in a number of states. We have attached a brief description of the NCA Water Quality Information Project to this statement. While our findings are not yet complete, we would like to assure you that there are a great number of activities which are ongoing in states across the country. We would be pleased to share a copy of this report upon completion with the Members of this Committee.

TIME FRAME

The time frame for various activities, the success of which depend a great deal upon effective management measures, seem to be short and conflicting. While the three year time frame for implementing management measures and site specific plans may be realistic, the fact is that these plans, required to be approved by the federal agencies, may be slowed by backlogs during the review process. Any delays during this review and approval phase will only shorten the period of time during which approved activities may be implemented.

In addition to backlogs and approval delays, NCA would question the timing of subsequent water quality assessments as site specific plans and management measures are being implemented. For example, if plans are not expeditiously approved, which then delays the implementation phase, well over half of the seven year time period allowed for implementation of these plans will be consumed. If only three or four years remain, after which time the effectiveness of said plans will be evaluated. The likelihood of these activities effectively protecting water quality is greatly diminished. Once again, NCA would urge the Committee to transfer these responsibilities of plan approval to states or local units, such as local conservation districts.

ANIMAL FEEDING OPERATION

NCA would also recommend to this Committee that Animal Feeding Operations which are not subject to point source permits under existing Section 402 not be considered as new sources of NPS pollution, and likewise not regulated under standards different than the balance of agriculture. These smaller facilities many times are, or will be additions to, a diversified agricultural operation. By requiring separate pro-

visions for various components of agricultural operations. Congress will clearly be discouraging diversification of America's farms and ranches.

NATIONAL PROGRAM GUIDANCE

The National Program Guidance is crafted and viewed as mandatory minimums for performance of site specific plans, rather than as a handbook for states to use to develop programs which are specific to their local needs and conditions. To avoid this confusion, it should be clearly stated throughout the guidance and this section of S. 1114 that the provisions contained herein are not viewed as minimums, but rather as recommendations to state agencies who are charged with assisting in the development of site specific plans. NCA also feels that it should be clearly reiterated that states have the authority to develop watershed management plans and management practices that are specific to the local conditions of a given watershed.

FUNDING

NCA appreciates the recognition of additional funding as necessary for the development of successful NPS management programs. EPA would caution the Committee against centralizing the funds in the manner included in S. 1114. For example, for the first two years, EPA has control of half of the funds to be provided to states for NPS management activities. These funds are to be allocated based on a formula which might easily be abused by states who have been starved for NPS dollars for the last five years. NCA would encourage this Committee to develop a provision for direct disbursement of funds to states, where allocations can be made on the basis of local needs.

NCA also would question the funding mechanism to be used beginning with Fiscal Year 1998, where allocations of half of the NPS funds are based on estimated costs of site specific plans. The bill does not indicate who may be responsible for estimating these costs. Landowners who are responsible for developing and implementing site specific plans will have a significant role in estimating the cost of said plans. NCA would question the manner in which this information can be organized by states to effectively compete with other states in securing NPS funds.

Since the 1987 Amendments were passed, funding for state NPS activities has been minimal. Funding for the first three years was zero, followed by funding at half the level authorized the last two years. Nonetheless, many states have developed NPS programs with other, equally limited funds. NCA urges the Committee to take a hard look at funding mechanisms in order to minimize abuses which may quickly hamper efforts to manage NPS runoff, as well as consider realistically the level of funding which may be available in future years. S. 1114 authorizes \$3 billion in NPS funding for Fiscal Years 1994 through 2000, compared to \$500 million for the last five years. It would be unfortunate to see a well crafted CWA re authorization which falls victim to inadequate funding.

The limitations on funds included in S. 1114 appear to be inconsistent with traditional agricultural programs. For example, no other federal funds can be available for a specific grant proposal, yet if funding is made available, the grant can only fund up to half the cost of said project (difference to be made up in nonfederal dollars). Also, this legislation would further limit one of the most effective funding programs by restricting states' grants programs to no more than half of the total funds available. NCA would urge the Committee to divert funding for land acquisition and conservation easements, the latter already provided for under the Food Security Act of 1985, to the grants program. The activity of acquisition, through easement or purchase, should not be granted to EPA, but rather to agencies who are not charged with enforcement of these provisions. At present, the Department of Agriculture can fulfill this role.

SITE SPECIFIC WATER QUALITY PLANS

The site specific plans included in S. 1114 offer opportunities for landowners to be recognized for their unique ability to reduce the threat of NPS runoff. NCA appreciates the Committee's recognition of the role that USDA can play in the development of site specific plans. NCA would encourage the Committee to also recognize local sources of assistance already available to landowners, such as local Soil Conservation Service, Extension Service and Conservation District offices.

S. 1114 recognizes specifically a number of current programs which protect water quality, such as the Conservation Compliance Program and the Conservation Reserve Program. We would hope that other, well developed and effective programs at the state and local level are not forgotten simply because they are omitted from S. 1114. One such program (information attached) has been developed in California by the California Extension Service and SCS with financial assistance from EPA. The

goal of the program entitled the Rangeland Watershed Program, is to develop public understanding of proper rangeland watershed management, to inform land owners and managers about current federal laws affecting private range land management, and implementation of a Rangeland Water Quality Management Plan in California. This plan is an example of states taking the initiative to disseminate information, and subsequently protect water quality.

The requirements for the site specific plans in S. 1114 are troublesome in two areas. First, we question how these plans will be required to demonstrate their ability to reduce water pollution. As we have said before, it is impossible to quantify reductions for NPS dischargers. Rather than quantification of NPS load reductions, effectiveness should be measured by attainment of the state designated use for each particular water body. Secondly, at what level will the determination of adequacy of these plans take place? The legislation would indicate that this task will occur at the federal level, but NCA urges the Committee to place this activity at the most local level possible. This will create less potential for delays and backlogs of a large number of plans at one level, and would also give the site specific plans a truly local orientation in order to help assure their effectiveness.

NCA would also like to discuss the time frame in which these site specific plans will be judged for effectiveness, and subsequently altered if determined to be inadequate. The recently completed Rural Clean Water Program, funded by EPA, provides an explanation of how effective NPS management activities have significant lag times between implementation and demonstrated response in water quality. After completion of the ten year program, some sites were only beginning to show water quality improvements. If the implementation schedule for a site specific plan is closely followed by the five year monitoring cycle, the site specific plan may later be inappropriately judged as ineffective and required to be changed. This sort of coordination of timelines is absolutely necessary for site specific plans to be the effective tool they are designed to be.

The Handbook, as referred to in this section, appears to be a floor by which site level plans are to be evaluated. Although the document is referred to as a "handbook", the expected format of this document (based on the time allowed EPA for publication) is certainly not expected to be user friendly. As long as the CZMA document is simply reiterated as this Handbook, site specific plans will be nothing more federally mandated controls for NPS discharges. Site specific plans must be rooted in local flexibility, and therefore should be developed and assessed by appropriate local agencies, such as SCS or local Conservation Districts.

FEDERAL PROGRAM COORDINATION

NCA questions the intent of the Committee with the approach taken under this section of S. 1114. Other federal agencies, who have clear roles in order to assist in the effectiveness of the CWA, should not be dictated their roles by EPA. For example, the bill states that all watersheds listed under Section 319 by states (with EPA concurrence) are to be considered as "conservation priority areas" by USDA. Additionally, EPA shall dictate to USDA appropriate lands for inclusion in the Conservation Reserve Program (CRP), and assist USDA in prioritizing their expenditures under CRP. Coordination among federal programs is an idea whose time has come; policies which create turf battles between federal agencies will not constructively protect water quality.

FEDERAL LANDS

In order for NPS management activities on federal lands to be an effective component of state watershed management programs, they should rely less on regulations and more on coordination with locally designed site specific plans. Furthermore, states should have a greater role in developing NPS management plans for federal lands, in order to further assure a consistent, coordinated effort between plans on privately owned and federally owned lands which share a common watershed.

ANIMAL WASTE MANAGEMENT FACILITIES

NCA feels that this section of S. 1114 creates an unnecessary new classification of sources separate from other NPS facilities. This section duplicates many provisions for Concentrated Animal Feeding Operations (CAFO's) in current law, as well as the Animal Feeding Operation provision of S. 1114. The provisions of this legislation would require federal guidelines to be developed by EPA. As with other portions of this bill, we would encourage the Committee to reconsider this notion. USDA clearly has, and will continue to, provide technical assistance of this nature to agricultural producers for years. We would also refer the Committee to the Waste Management Field Handbook, recently released by USDA, as an appropriate guide for state

and local decision making with regards to animal feeding operations and associated facilities.

ENFORCEMENT

NCA would question the necessity of such broad enforcement capabilities for citizens, when states must demonstrate adequate enforcement provisions in a state watershed management plan submitted for EPA approval. NCA is also concerned that, as load allocations and reductions for NPS as well as point source dischargers are developed, NPS will be held in violation, sued for unlawful discharge (no discharge permit or exceeding permitted discharge), and fined to the maximum extent possible. This particular section offers a great potential for abuse. If this provision remains intact, discrete NPS activities would be accountable to the same level of permits and fines as discernible point sources.

NCA is also concerned with the provision in S. 1114 where civil penalties are to be used for beneficial "restoration of water quality, wildlife or habitat of the waterbody". This provision will allow special interest groups to sue for wrongful discharge, and then settle the grievance out of court for an amount less than the fine levied on the discharger. Instead, this money should go to the U.S. Treasury or to fund water programs that need funding, rather than as a donation to special interest groups. The significant increase in funding authorized by S. 1114 warrants this change.

STATE DEFERENCE

States have historically been granted deference in a number of substantive areas of the CWA. These areas include the designation of uses of waters within their jurisdiction, water quality standards necessary to support these uses, and land use measures to reduce the threat of NPS runoff. Deference to states should not be hindered by the provisions of CWA re authorization in any manner. An effective NPS management program must be locally based and state managed in order to provide protection for state designated water uses.

Another provision that is an important component of states' rights is what is commonly referred to as the Wallop Amendment. This provision, in a greatly edited form, is included in the Comprehensive Watershed Management section of S. 1114. Many groups, including NCA, have asked that this amendment, found in the current law at Section 101(g), added without changes to the substantive portions of this bill, such as the states' authority section. This is an important provision for land owners and water users in many states of the country.

CONCLUSION

Cattle producers across the country are key components to water quality protection efforts. We have the knowledge and expertise that, combined with local assistance from USDA agencies such as the Soil Conservation Service or Extension Service, will make positive strides toward protecting water quality.

NCA would urge this Committee to maintain a state and local focus throughout efforts to craft a Clean Water Act re authorization measure. Adequate science and funds must be available to accurately identify sources of pollution. Effective and cost efficient responses to water quality problems must be rooted in local programs with solutions tailored to local conditions. Incentives to land owners should be locally based and can include a number of considerations, including technical and financial assistance.

Mandatory federal land use requirements, promulgated at the federal level, will not guarantee significant protection of water quality. They will, however decrease the productive capacity of property, and therefore constitute a takings. The usurpation of private property rights in the form of federally mandated land use control measures, should be avoided during reauthorization of the CWA. A more effective program rooted in local efforts with significant landowner involvement, should be the basis of an effective CWA reauthorization measure.

The NPS provisions of the current law are not broken, but they can be improved upon. The quality of all "waters of the United States" must be assessed on a continuous basis. Limited resources must be targeted to those areas with a demonstrated water quality problem. Land owners, through voluntary programs established at the state and local levels, can be significant components of an effective NPS management program. Federally driven efforts to direct land use will not be adequate to protect water quality. These efforts must be directed by states.

NCA appreciates the opportunity to submit testimony regarding S. 1114, the Water Pollution Prevention and Control Act of 1993. NCA welcomes the opportunity

to work with the Members of this Committee and their staff as CWA re authorization continues. Thank you.

PRINCIPLES STATEMENT OF THE CLEAN WATER ACT WORKING GROUP

AMERICAN FARM BUREAU FEDERATION; AMERICAN FEED INDUSTRY ASSOCIATION; AMERICAN NURSERYMEN; AMERICAN SHEEP INDUSTRY ASSOCIATION; AMERICAN SOY-BEAN ASSOCIATION; THE FERTILIZER INSTITUTE; NATIONAL AGRICULTURAL CHEMICALS ASSOCIATION; NATIONAL ASSOCIATION OF CONSERVATION DISTRICTS; NATIONAL ASSOCIATION OF WHEAT GROWERS; NATIONAL BROILER COUNCIL; NATIONAL CATTLEMEN'S ASSOCIATION; NATIONAL CORN GROWERS ASSOCIATION; NATIONAL COTTON COUNCIL; NATIONAL COUNCIL OF FARMER COOPERATIVES; NATIONAL FOREST PRODUCTS ASSOCIATION; NATIONAL MILK PRODUCERS FEDERATION; NATIONAL PORK PRODUCERS COUNCIL; NATIONAL TURKEY FEDERATION; NATIONAL WATER RESOURCES ASSOCIATION; U.S. RICE PRODUCERS.

CLEAN WATER ACT REAUTHORIZATION: NONPOINT SOURCE PROVISIONS

In the reauthorization of the Clean Water Act. Congress should adhere to the following principles:

1. The Clean Water Act (CWA) does not stand alone in protecting America's waters from nonpoint source (NPS) pollution. Other ongoing programs at the federal, state and local level must be funded fully, coordinated with and not superceded by the CWA. This includes, in particular, the soil conservation and water quality provisions of the 1985 and 1990 farm acts and the state groundwater and surface water protection programs of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
2. Recognizing the 20 year commitment our country has had to eliminating point-source pollution, success in reducing the more complex and diverse NPS pollution will require similar time and resource commitments. However, management of this problem will require a different approach than that of point source pollution elimination because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities.
3. The central locus of NPS management solutions should be a reasonable and voluntary approach based on incentives, education and technical assistance as the primary means of managing NPS pollution.
 - NPS pollution management programs should (a) emphasize the protection of water resources and state-designated water uses, including state-designated agricultural uses, and (b) recognize the importance and needs of individual agricultural producers and other landowners affected by the CWA.
 - This approach emphasizes the use of locally designed and applied, economically feasible, site-specific best management practices which do not infringe on private property rights. Implementation of these farm management options over a realistic time frame will further the goal of reaching or maintaining designated uses of water bodies.
 - It is inappropriate to link USDA commodity, conservation or disaster program payments to the success or failure of management programs for NPS pollution authorized under the CWA.
4. Current CWA language contains valuable provisions for NPS management embodied in Section 319. Although this NPS section has been historically underfunded and has been hampered by bureaucratic roadblocks, all states now have approved Section 319 assessments and approved management programs. Within the CWA, it is the preferable vehicle for management of NPS pollution, and changes which occur during CWA reauthorization should reinforce these existing NPS provisions.
 - The proper management of NPS pollution lies in state and local efforts. As such, states should continue to identify and resolve their priority NPS water problems through administration of Section 319 funds. With state oversight and approval, local organizations should continue to carry out these NPS programs. Agencies at the federal and state levels should harmonize objectives and coordinate funding for national and regional NPS management programs.
 - State and local programs should provide for a mix of research, development, education and technical and financial assistance for both planning and implementing actions aimed at achieving state designated uses.

5. Management efforts funded by Section 319 of the CWA should be directed to priority areas based on scientific assessments that identify water bodies with impaired or threatened uses.
 - Priority, as determined by states, should be based on the magnitude of risk to human health, the protection of designated uses, and likelihood of further significant and unreasonable water quality degradation if no action is taken.
 - Strategies should be developed on a hydrologic unit, watershed-wide basis using an approach that includes the consideration of both surface and ground water quality.
 - Programs should focus on cost-effective, site-specific practices for individual operations with flexibility for implementation.
 - In order for Section 319 to work effectively for agriculture, USDA must play a lead role in the delivery of education and technical assistance at the state and local level.
6. An effective and cost-efficient response to water quality problems requires accurate and reliable information on (a) the source, extent, and impact of NPS pollution, as well as (b) the effectiveness, utility and economic feasibility of conservation measures and best management practices.
 - Any Clean Water Act reauthorization should include a strong financial commitment to further research, monitoring and assessment projects.
 - Monitoring should include before and after sampling as well as frequent sampling during storm events and assessment of natural and historic loadings.
 - Scientific research and monitoring projects should follow protocols developed by the U.S. Geological Service and should be conducted on a watershed basis with local and state input.
 - Representative pilot projects aimed at achieving market based incentives on a watershed or regional level should be encouraged.
7. The Clean Water Act Reauthorization should not directly or indirectly create a federal water quality law or program which supercedes, abrogates or impairs state water allocation systems and water rights.
8. Section 319 management programs on federal lands should be developed and implemented by the specific agency statutorily charged with management of the lands in question, rather than by regulatory authorities independent of that agency.
9. It is inappropriate for a reauthorization of the Clean Water Act to provide the authority for citizens suits against individuals participating in NPS management programs.

STATEMENT OF L. SCOTT TUCKER, CHAIRMAN, STORMWATER COMMITTEE, NATIONAL ASSOCIATION OF FLOOD AND STORMWATER MANAGEMENT AGENCIES

Introduction

Mr. Chairman, my name is Scott Tucker, and I am Executive Director of the Urban Drainage and Flood Control District in Denver, Colorado. The District provides both flood control and stormwater management services for the Denver metropolitan area, serving approximately 1,800,000 citizens in 30 municipalities and six counties.

Today I am appearing on behalf of the National Association of Flood and Stormwater Management Agencies (NAFSMA), a national organization representing more than 50 flood control and stormwater agencies serving a total population of more than 50 million citizens. I now serve as Chairman of the organization's Stormwater Committee and as a member of the Board of Directors.

NAFSMA appreciates this opportunity to share our views on The Water Pollution Prevention and Control Act of 1993, specifically its provisions affecting municipal separate stormwater systems. As we move forward together to expand the municipal stormwater program, we need to build a strong intergovernmental partnership. The legislation before us today is clearly moving in that direction. More important, it shows a willingness by this committee to take control of the debate on the future of municipal stormwater quality regulation.

With this legislation, the intent of the 1987 Act is more precisely expressed, underscoring that this is a phased national program of considerable magnitude. It appropriately emphasizes the immediate role that local officials, both elected and technical staff, must play in designing stormwater management programs that will work in their communities and in pursuing measures that respond to identifiable

problems. The legislation also recognizes the limitations of the National Pollutant Discharge Elimination System (NPDES) as a means of controlling urban stormwater runoff in the near term, avoiding "command and control" directives that will not work. In short, the proposal recognizes the limitations of what we now know and sets us on a course to build more knowledge and experience in developing cost-effective responses to municipal separate stormwater system discharges.

Mr. Chairman, as you work to finalize new amendments affecting municipal stormwater systems, please reflect on the recommendations that you will hear today on non-point pollution. Urban runoff quality is a non-point pollution problem. The fact that most communities constructed separate stormwater systems to collect runoff and deliver it as point discharges does not change its character. In virtually every other sector, the same runoff is non-point pollution. Statements before this committee emphasizing the need for flexibility, management approaches, pollution prevention and decentralized decision-making in tackling non-point pollution and urgings that "one size does not fit all" circumstances apply fully to urban runoff as well.

Comments and Recommendations on the Municipal Separate Stormwater Provisions of S. 1114

Mr. Chairman, in reviewing the provisions of S. 1114 within the context of NAFSMA's principles for new legislative amendments, we find that it addresses the major elements of our position statement. A full discussion of NAFSMA's principles is provided later in this statement. The following summarizes the features of S. 1114 affecting municipal stormwater systems, providing suggestions and other comments on areas to strengthen the framework that has been set forth. I have also cited preliminary results from our 1993 survey of the Phase 1 large and medium systems to support our comments on the proposed changes to the municipal stormwater program.

I. Point vs. Non-Point Sources

Short of massive engineering solutions involving costly detention and treatment of municipal stormwater to comparable levels for point sources, the remedies for pollution carried by municipal stormwater systems have to rely on programs for source control, pollution prevention, improved public and private management practices, education and the like. These activities represent the most appropriate and cost-effective methods of addressing municipal stormwater discharges for the foreseeable future.

Local governments have consistently taken the view that while the NPDES permit program was selected as the means to deliver structure and accountability to the national regulatory effort, it is a tool that must be customized to reflect the non-point nature of urban runoff. Many in the local government community believe that it is not possible to adapt the NPDES permit structure to municipal stormwater and have argued that large and medium systems should be taken out of the NPDES permit program entirely.

U.S. EPA in its November 1990 regulations and in other actions on the municipal stormwater program has been struggling with expectations that a NPDES permit somehow guarantees certainty and uniformity in how each community will combat pollution conveyed by their municipal separate stormwater system. The agency has worked to adjust to the limitations of Section 402, establishing a regulatory framework that emphasizes the non-point nature of urban runoff. This approach is fully supported by the legislative history and debate on the 1987 Act amendments and is again confirmed in the proposed amendments before this committee.

The provisions of S. 1114 acknowledge the limitations of the NPDES program, proposing changes that make the permit process more compatible with local control strategies and programs to combat urban runoff. First, the future regulation of most of the nation's smaller communities will be addressed through state non-point program initiatives, not NPDES permits. This is an appropriate course of action and we commend the sponsors for making this change. NAFSMA's members, I should point out, are generally large and medium systems that are now seeking NPDES permits under Phase 1 of the national program. For communities operating under the constraints of the NPDES permit system, the legislation aligns the use of water quality standards in the near term with the realities of local conditions and circumstances in controlling urban runoff. It also provides further direction on the Maximum Extent Practicable (MEP) standard that will guide permit-writers in developing permits based on management practices and other such measures.

II. Water Quality Standards (WQS) & Maximum Extent Practicable (MEP) Standard Water Quality Standards:

The use of water quality standards in municipal stormwater system permits has received considerable attention by all parties involved in municipal stormwater issues. The application of standards and the associated water quality-based limits is the central concern of our members and others that are now developing stormwater management programs under Phase 1 of the program. It also represents the most striking example of how the NPDES permit program, as applied to conventional point sources, fails to respond to the practical and administrative impediments in regulating urban stormwater.

S. 1114 offers a remedy that is not only appropriate, it is essential. We are not in the position to translate existing water quality standards into municipal stormwater system permit limits in a manner that is enforceable or achievable. The provisions of S. 1114 offers a period of time to understand and assess how and if water quality standards can be applied to municipal system permits. I can assure this committee that communities will use this time to implement and demonstrate how management practices and other measures can achieve water quality improvements. It is imperative that the federal government use this time to further refine the science to support the use of standards appropriate for urban stormwater. S. 1114 should include directives that ensure that U.S. EPA undertakes this necessary research and program development.

S. 1114 acknowledges that you can have enforceable permit conditions (i.e. the management practices specified in the permit) without the direct application of water quality standards in the form of numeric effluent limitations. During this interim period, permittees and permit-writers will use water quality standards as the guidepost in developing and assessing the effectiveness of local program efforts. More important, it is has the immediate benefit of allowing communities to get on with the task of developing and implementing stormwater management programs and measures. All of these initial local efforts, its should be noted, are intended to improve water quality, either directly or indirectly.

Mr. Chairman, as we enter the next generation of the Clean Water Act, we must strive to make this program an example of a functioning and healthy partnership, whereby communities work cooperatively with federal policy-makers in taking on the difficult task of controlling pollutants that pass through our municipal systems. This program is not about leveraging permittees with the threat of unreasonable burdens and costs, it is about improving the quality of urban runoff. All parties in this debate know that it is now impossible to subject municipal system discharges to the level of performance of traditional point sources. We commend the authors of S. 1114 for responding to local governments on this issue. It is one aspect of the municipal stormwater program that will be continuously reviewed and evaluated over the next several years.

Maximum Extent Practicable (MEP) Standard:

As you know, U.S. EPA issued its permit application regulations for municipal systemwide permits setting forth a very comprehensive, and in several areas overly-burdensome program framework, to guide permittees and permit-writers in developing municipal stormwater management programs.

During development of first term permits for municipal systems, the permittees will help shape what will be locally- and regionally-specific permit requirements under the Maximum Extent Practicable (MEP) standard. As the committee considers what constitutes an acceptable interpretation of the MEP standards, let me provide some background on how NAFSMA sees the current system and state of knowledge. Preliminary results from NAFSMA's 1993 survey of large and medium systems now seeking permits tells us that most communities do not have enough information to make reasoned judgments about urban runoff and local receiving water quality. These responses are very consistent in noting an inability to demonstrate the effects of management practices on water quality. In the absence of such information, the current program is basically about good community housekeeping. In spite of these limitations, large and medium systems are moving forward with management programs, uncertain about what will work, unsure about how to convince their elected officials and citizens that costs of the program can be justified and not knowing what the benefits will be.

The assumption and the hope is that in the aggregate and over time the applied management practices will improve the quality of urban runoff and, more importantly, the quality of receiving waters.

This view of the system stands in stark contrast to witnesses and others that suggest that there is more certainty in these decisions and urge the adoption of minimum measures to be required in all municipal system permits. This view of the system simply defies overwhelming evidence to the contrary and the experience of practitioners in the field, most of whom are senior engineers in the nation's largest cities and counties. What we consistently hear from our member agencies and others is that the municipal stormwater program at this juncture is a mandatory national demonstration program. Yet these same officials indicate that if there is a problem with urban runoff, they want to find out what it is and what they can do about it.

I noted that NAFSMA is now in the process of assembling information from our 1993 survey of the approximately 200 large and medium systems that are now seeking permits for their stormwater systems under the first phase of the national program. Most of these communities will receive their final permits by the middle of next year. From our survey last year we estimated that the some 200 listed cities and counties have expended nearly \$140 million in preparing permit applications or an average of approximately \$750,000 per community. We estimate based on initial results from our 1993 survey that more than 40 percent of these same jurisdictions anticipate expending at least 10 times the amount of their application costs during the initial five-year term of their permits. In the Denver area, for example, the cities of Denver, Aurora and Lakewood anticipate total expenditures of nearly \$23 million during the first permit term.

The scale of these projected expenditures by large and medium systems over the next five years is a significant effort, given that the problem is ill-defined and the benefits are unknown. This program is obviously much more than "writing your own permits" as some have asserted. It is about communities attempting to identify and correct water quality problems that are real and identifiable. This program will collapse if this committee and others in the Congress give way to the notion that there is a "silver bullet" out there or a "one size fits all" scenario. When you consider this level of investment among the larger systems relative to the level of uncertainty, it does support S. 1114 in terms of how additional communities are phased into the program.

It simply makes sense to allow communities that are brought into the municipal stormwater permit program to secure some of the benefits from the efforts of larger jurisdictions that go before them. The 1987 amendments appropriately set forth such an approach.

This preliminary survey data also underscores the wisdom of proceeding carefully with a statutory definition of MEP. S. 1114 defines MEP as the equivalent of the guidance issued pursuant to the CZMA reauthorization amendments of 1990. Two years after enactment, U.S. EPA is directed to set additional requirements, further defining the MEP standard.

Our survey results further illustrates how difficult it is to design a national program using set assumptions or fixed minimum program elements. For example, the 1987 Act directed that all listed communities remove illicit connections from their stormwater systems. This is good practice and one that makes sense for communities that have a problem. EPA had some evidence to suggest that this was a problem in several communities, providing the basis for the 1987 statutory directive to remove illicit connections. Two-thirds of our 1993 survey respondents have already indicated that illicit connections were not a problem or occurred in low amounts.

We asked communities to identify the most significant limitations of their program over the near-term in controlling stormwater runoff. Virtually every respondent cited their inability to document the effects of management practices on water quality. In response to a question on how they would allocate any new federal funds that came to the states, respondents cited the need for demonstration grants assessing technology, BMPs, etc. along with grants to implement local management programs at their top two choices. What is revealing is about these responses is the consistent pattern that communities want more information and support of their efforts to learn about what practices will work in their respective communities. This is a threshold issue regardless of whose resources are being expended. It also amplifies our position that measures to improve urban runoff are not readily apparent or even fully demonstrated.

In the metropolitan Denver area, for example, we sit more than 5,000 feet above sea level. I am certain that EPA staff, its consultants and commentators did not have all of my concerns before them when they were developing the final CZMA guidance document. This committee should expect to hear from communities where local conditions, such as arid and semi-arid regions, would necessitate another look at this guidance and proposed management measures.

As U.S. EPA develops its guidance on the MEP standard, NAFSMA, therefore, recommends that EPA be given the authority and direction to make necessary revisions in the CZMA guidance to make it more effective and workable if it is to be used as a national standard. NAFSMA also echoes the comments of the National League of Cities in requesting that EPA be required to work with state and local governments in developing these CZMA revisions and any additional management requirements under the MEP standard. To ensure that this process is inclusive and can take full advantage of new information, U.S. EPA should be given at least three years, not two, in issuing this guidance on the MEP standard.

III. Industrial Facilities

Current regulation define certain facilities owned and operated by local governments as industrial facilities. Under existing regulations, local governments with large or medium separate stormwater systems must submit separate applications for NPDES permits for all designated "industrial facilities" that they own or operate, while at the same time they must apply for systemwide permits. NAFSMA recommends that the committee provide a process allowing local governments, at their discretion, to include stormwater discharges from municipal facilities in their systemwide NPDES permit.

This is also interest among jurisdictions in having local agencies provide additional regulatory support to the efforts to control discharges associated with industrial facilities, recognizing that these functions are now properly assigned to state and federal permit and compliance personnel. NAFSMA supports changes in current law to allow, but not require under any circumstances, federal and state agencies to transfer regulatory responsibilities to municipal permittees for "industrial facilities" within their service areas. Under S. 1114, construction sites of 1-5 acres and gas stations would be required to seek an industrial permit if the municipal permittee chooses not to regulate these sources. NAFSMA supports this approach to regulating industrial sources.

IV. EPA/State Research and Technical Assistance Capabilities

The provisions of S. 1114 directing the Administrator to undertake a biennial report to Congress on national sources controls and authorizing the Administrator to take steps to control the introduction of such contaminants into municipal stormwater systems are an important step forward in defining a continuing federal policy role in support of local stormwater program efforts. All communities are expected to rely on source controls and other pollution prevention measures as the defining elements of their local programs. What is now evident in the debate over the 1987 Act amendments, and to be remedied by S. 1114, is that Congress did not provide any role for the federal government in defining and implementing strategies to limit or control the introduction of contaminants to municipal separate stormwater systems. Communities under current law are assigned the entire task of managing stormwater quality even though local governments are severely constrained in their ability to control many of the inputs into their systems. S. 1114 directly enlists U.S. EPA as a partner in helping us prevent the introduction of contaminants, many of which can only be controlled at the federal level.

I have already discussed NAFSMA's recommendation that new provisions be added to S. 1114 to require U.S. EPA to initiate additional efforts to improve the science and research to support the application of appropriate standards to municipal stormwater system permits. I recognize that while proposed revisions of the standards program under S. 1114 anticipate that this work will go forward, we would request that U.S. EPA be specifically directed to address this important area of concern.

NAFSMA and its members also have continuing concerns about the administrative and technical capacity to respond to an expanded municipal stormwater program. S. 1114 would add an estimated 1,000 municipalities and more than 200 counties to the municipal system permit by the end of this decade. These communities will require more assistance and support than the first tier of larger systems. Your final bill should anticipate and direct funding for increased staffing and technical assistance support well in excess of the current levels of support.

NAFSMA, as an organization, has not taken a formal position on funding for communities. The Administration has recommended and S. 1114 proposes further capitalization grants to states for their SRF programs to support a broader range of clean water programs, including stormwater. I should point out that our preliminary survey results show a very strong interest in grants to support demonstration projects on BMPs, related water quality assessments and studies pertaining to mu-

municipal stormwater programs. In our view, the suggestion by the National League of Cities to allow some set-aside of SRF funds allocated to each state to support such demonstration projects, selected research and studies makes sense and would enhance the knowledge and practical execution of measures in support of municipal stormwater programs. Our preliminary survey responses indicate very little interest in loans for local programs, reflecting the fact that municipal stormwater programs are operating programs and are funded on a "pay as you go" basis. Communities will not use debt financing to support these program activities.

Status Report on Municipal Stormwater Program

The Water Quality Act of 1987 established an approach for the permitting of municipal stormwater discharges for the nation's larger cities and counties that is now fully in place and moving forward on the schedule set forth in U.S. EPA's November 1990 regulations. Approximately 200 communities serving a substantial portion of urban America have already filed applications for systemwide National Pollutant Discharge Elimination System (NPDES) permits, representing a major milestone in what will be a long term effort to address urban stormwater runoff.

Mr. Chairman, I am pleased to report that these larger communities have been both timely and earnest in responding to this federal directive. More importantly, despite considerable uncertainty, continuing local resource constraints and the revenue effects of a lingering recession, the initial commitment of local resources has been substantial. Total permit application costs, according to a 1992 NAFSMA survey of cities and counties to be permitted, are estimated at \$130—\$140 million. This survey also points out that the costs of permit applications are much higher than this estimate when the jurisdictions with early permits and the smaller communities that joined with larger, listed jurisdictions in areawide or joint applications, are included. NAFSMA is now conducting a follow-up survey of these same jurisdictions to secure final application cost data and to generate a nationwide view of the program as communities secure their initial permits.

Mr. Chairman, a legislator who shaped the 1987 requirements for municipal systems emphasized that the permits for municipal separate stormwater systems would not be permits in the traditional sense but were to be "programs." We strongly agree with this view and would add that the programs and measures that municipalities must develop to control pollutants conveyed by municipal systems are new programs and unfortunately at this time, we do not know how to measure their performance or effectiveness. In short, the nation's larger cities and counties are now charting the course, using the NPDES permit program as the means into the complex issues of non-point pollution, specifically urban stormwater runoff. We are at the front of the line in discovering the level to which our citizens and institutions are willing to make the required adjustments in the way we live and work. The irony of this circumstance is that, in spite of this massive local effort, there is little known about the ultimate effectiveness of this endeavor.

The success of this effort over the near term will depend on the creativity and consensus-building of our local communities, supported by our technical and elected leadership, and their ability to direct massive new financial resources into stormwater systems. Over the longer-term, the level of support and commitment that you and others at the federal and state levels provide will be a critical determining factor in achieving the most significant improvements in the nation's stormwater quality.

Our experiences have shown what we believe is the most significant deficiency in the design of this federal initiative directing larger communities to seek permits for their stormwater systems. The municipal stormwater provisions have created an expectation that now pervades the system that these are our pipes and therefore our pollutants. The 1987 Act did not set forth a parallel agenda for the federal government and/or the states to begin reviewing actions and measures to support a broad-based reduction in the sources and availability of pollutants that find their way into municipal storm drains. In short, if this is a national problem, we see little evidence of any federal and state leadership backing our efforts. S. 1114 through its provisions on national source controls is moving federal policy in a direction that supports our efforts.

This initiative is particularly important in light of the results of more advanced local programs that are now documenting the contributions of the automobile, impacts of air pollution, and a vast array of household and commercial chemical uses. In short, Mr. Chairman, we know treatment facilities will not work and we know that controlling the sources is what this program must be about. We need a higher level of national leadership that places the federal government, in its policies and actions, on a course to do its part. In many areas, you are the only level of govern-

ment that can effectively help us control what passes through our stormwater systems.

NAFSMA POSITION

NAFSMA's key principles setting forth the organization's position on future legislative proposals on municipal stormwater systems are as follows.

I. Point vs. Non-Point Sources

There is a need to emphasize more definitively in the Act that municipal stormwater systems convey, not create, pollutants, that are generated by many different sources. As such, municipal separate stormwater systems are more like non-point pollution sources than traditional point sources. The matter of placement of municipal stormwater in Section 402 in the Clean Water Act reinforces inappropriate and unworkable linkages to other CWA requirements developed for point sources that over time may be extended to municipal separate stormwater system permits, rather than emphasizing the non-point nature of this problem and the appropriate control measures (i.e. management practices).

Short of massive engineering solutions involving costly detention and treatment of municipal stormwater to comparable levels for point sources, the remedies for pollution carried by municipal stormwater systems will rely on programs for source control, pollution prevention, improved public and private management practices, education and the like. These activities represent the most appropriate and cost-effective methods of addressing municipal stormwater discharges for the foreseeable future. Such measures are similarly applied in addressing non-point pollution problems that are currently supported under Clean Water Act programs.

Position: New amendments should redefine municipal stormwater permit requirements, separating this category of NPDES permits from current law linkages and requirements for NPDES-permitted point sources.

Moreover, establishing municipal stormwater as a distinct category of the NPDES permit program does not preclude or limit the implementation of appropriate water quality standards (WQS) to protect beneficial uses.

II. Water Quality Standards (WQS) & Maximum Extent Practicable (MEP) Standard

NAFSMA members rightly assert that compliance with all existing WQS in every storm event cannot be achieved in the municipal program. Clarification of water quality standards and objectives as applied to municipal stormwater is needed to account for the substantial geographic variability and differences between municipal separate stormwater systems and traditional waste water and industrial effluent sources.

Existing NPDES permit application requirements for municipal systemwide permits provide permittees and permit-writers with an opportunity to develop locally- and regionally-specific permit requirements under the Maximum Extent Practicable (MEP) standard to address water quality problems attributable to municipal stormwater discharges. New Clean Water Act amendments further defining MEP should account for substantial progress, including level of effort, local expenditures and assessments of local stormwater impacts which have been or will be achieved under current law and regulations. In addition, such CWA amendment proposals should recognize that permit applications, the resulting permits and compliance efforts will further define and implement the MEP standard.

Position: NAFSMA members intend to move forward with reasonable and fiscally sound programs, including best management practices and other pollution prevention measures, to address urban stormwater impacts on receiving waters.

NAFSMA urges adoption of a longer-term federal strategy to develop new water quality objectives for municipal stormwater runoff that are appropriate to identified water quality impacts on designated uses, properly account for urban stormwater and are technologically-achievable and financially responsible. Existing water quality standards can be used in the interim to measure progress of municipal stormwater permits and programs, while compliance under the Maximum Extent Practicable (MEP) standard is measured by performance of the practices specified in the permits.

III. Industrial Facilities

Under existing regulations, local governments with large separate stormwater systems must submit separate applications for NPDES stormwater permits for all designated "industrial" facilities that they own or operate, while at the same time they must also apply for systemwide NPDES permits.

There is interest among some municipalities and regulators in having local agencies provide additional regulatory support to the efforts to control discharges associated with industrial facilities, recognizing that these functions are now properly assigned to state and federal permit and compliance personnel.

Position: NAFSMA supports legislative or regulatory changes to provide a process allowing a local government, at its discretion, to include stormwater discharges for municipal facilities (current regulations defined certain facilities owned or operated by the local government as industrial facilities) in its systemwide NPDES permit.

In addition, NAFSMA supports changes in current law to *allow, but not require under any circumstances*, federal and state agencies to transfer regulatory responsibilities to municipal permittees for "industrial facilities" within their service areas.

IV. EPA/State Research and Technical Assistance Capabilities

NAFSMA is concerned about the lack of technical and outreach capacity to assist municipal applicants in designing and implementing cost-effective programs and measures to address municipal stormwater discharges. For example, during the application preparation phase of this program, regulations requiring monitoring programs were not well conceived and have resulted in substantial local expenditures for results of limited value to the regulatory agencies and local agencies.

NAFSMA believes that resources are needed to strengthen the technical and programmatic capabilities of EPA and the states to help ensure timely and cost-effective implementation of control measures by regulated municipal systems.

NAFSMA is also concerned that the limited resources now allocated to federal and state agencies for research, technical assistance and other related information exchange functions cannot adequately support an expanding municipal stormwater program in all of the hydrologic regions of the country. Moreover, even the basic information dissemination efforts (e.g. copying and mailing documents, development of case studies to disseminate information on local programs, etc.) are very limited.

Position: NAFSMA supports the establishment of a separate authorization to fund new studies, pilot grants to communities, direct technical assistance to communities, clearinghouse and database functions for information-sharing, further research and effective technical development activities in cooperation with state and local governments in similar geographic/hydrologic regions.

V. Smaller Communities and Other Phase II Sources

NAFSMA believes that we are not ready to proceed with an expansion of the stormwater program beyond the sources that are presently subject to permit requirements. Current law authorizes U.S. EPA and the states to require NPDES permits for Phase II sources where water quality problems exist. This authority has already been exercised on numerous occasions, to address discharges from Phase II sources, such as smaller communities and currently unregulated industries.

As representatives of many of the communities already subject to municipal permit requirements, we feel it is crucial that we gain more experience and knowledge before we move forward with an expanded program. This Committee is urged to pursue a full discussion with U.S. EPA and state administrators on the implications of moving forward at this time beyond the Phase I sources.

Position: NAFSMA supports a deferral of further regulation of the Phase II sources (except in individual cases where federal and/or state administrators require a permit under existing law) until such time as the federal and state regulatory systems are capable of assuming this substantial responsibility and can develop regulatory requirements based on the experiences of the Phase I program.

Conclusion

First, the primary concern of NAFSMA members is that water quality-based limits, including numeric effluent limitations, should not be used in the municipal stormwater permit program to measure permit compliance. Instead, compliance should be based on permittee performance of the practices specified in the permits. S. 1114 addresses this major concern by imposing a ten-year moratorium on numeric effluent limitations and the direct application of water quality standards. However, it is essential that this ten-year period be used to advance urban runoff science to allow the development of appropriate standards for wet weather conditions.

Second, the CZMA guidance document was developed for coastal areas. This document needs to be reviewed and further modified before it can be properly applied nationwide.

Third, a significant effort is already underway by the some 200 larger cities and counties and an estimated 400 other jurisdictions to reduce the pollution carried by municipal separate stormwater systems. As an indication of the level of effort, over \$130 million was spent by the 200 larger cities and counties to prepare applications. Preliminary indications from a recent NAFSMA survey shows that many of these permittees are projecting to spend at least ten times the amount of their application costs during the first five years of their permit. Overall investment in municipal stormwater program efforts will increase significantly as more communities are brought into the program.

Fourth, we urge that federal government and states to commit the political, financial and technical resources to adequately support local efforts. Local governments alone will not be able to achieve the results we are all seeking, nor will local governments believe that Congress is really serious about this problem if adequate federal and state support is not provided.

There are other issues in the legislation that are now under review by our members. NAFSMA will report to you and your staff providing additional recommendations as you develop your final legislation.

Mr. Chairman, I thank the Subcommittee for this opportunity to share the views of NAFSMA on the Clean Water Act reauthorization.

STATEMENT BY THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL ADMINISTRATORS (ASIWPCA)

We are, Mr. Chairman, pleased to submit our statement for the record. As you know, the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) is the national organization of state officials who on a daily basis implement the Clean Water Act. Mr. Chairman, the states appreciate your personal leadership in the Clean Water arena and we are delighted that you are conducting this series of hearings on reauthorization.

Since 1972, states have made tremendous strides in cleaning up and protecting the environment. Water quality improvements have been well documented by both ASIWPCA and by USEPA. Not surprisingly, with the point source focus of the past two decades, it is now appropriate for States to expand and enhance their programs to address nonpoint sources (NPS). Recent ASIWPCA reports indicate that NPS now represent the majority of remaining water quality problems in the nation's lakes, streams, harbors, bays, coastal waters and groundwater due to current activities, natural conditions and past practices. Under the 1987 Water Quality Act, States placed high priority on NPS control and gained considerable experience confronting many of these serious problems. While the 1987 Water Quality Act represented a starting point for the national program, it is now time to move ahead from the demonstration phase to implementation.

States applaud S. 1114 for recognizing the importance of NPS in the nation's clean water efforts and we have some suggestions that are intended to enhance the Senate provisions. Our comments and recommendations are based on, the following principles:

- The Clean Water Act must strengthen State efforts by assisting them in building permanent programs. Under the 1987 Act's demonstration program, States could not count on a stable national commitment. The Clean Water Act should assist States and Local governments in developing the right institutional structures for long-term NPS management
- The Clean Water Act should support and complement ongoing State programs, with flexibility to continue and expand those efforts. It should not prescribe a particular approach to be used, because that would slow down State efforts. *Command and control for the too down will not work*—there is too much diversity among the pervasive NPS and other factors.
- The Clean Water Act needs to provide an improved national framework with:
 - Established national goals and schedules,
 - A clarified definition of NPS,
 - Improved USEPA guidance,
 - Progressive water quality based management in targeted watersheds and
 - Pollution prevention for new sources.
- Mandates, milestones and deadlines for NPS control must be realistic. It has taken 20 years to come this far in the point source arena—we can not expect the NPS program to be an overnight success. NPS control must be viewed as a *long-term* task comparable to point source control, but requiring a substantially higher level of intergovernmental coordination and cooperation.

- NPS control can best be achieved through a "package" of voluntary and mandatory approaches. While the latter may be needed for specific NPS categories, the most effective approaches rely on a combination of incentives, technical/educational assistance, enforcement, etc. States need flexibility to determine the appropriate balance to accomplish Clean Water goals.
- Targeted and focused efforts are essential. NPS are ubiquitous. Severely constrained staff and financial resources must be used as efficiently and effectively as possible to maximize water quality results within a reasonable time frame.
- Water quality monitoring is a vital component of an effective NPS control program to identify impaired waters, further develop cause and effect relationships between sources and water quality impairments and measure the success of management measures. This too takes time.
- Significant improvements must be made in the basic science of NPS control—there is *a great deal we do not know* that inhibits progress. NPS control needs to be better related to water quality needs, particularly regarding appropriate water quality standards and determining best management practices (BMP) effectiveness.
- Federal agencies need to comply with State NPS management plans. The Federal government must be required to practice what it preaches. Not only are they a major part of the problem, they can also be a key to the solution. The Federal government should be leaders in demonstrating proper management.
- Adequate Federal 319 funding, covering all aspects of the program, is essential to achieve water quality goals in a timely manner.

ASIWPCA COMMENTS AND RECOMMENDATIONS

I. IMPROVING THE NATIONAL FRAMEWORK

ASIWPCA supports an improved national framework for NPS control that includes:

- Establishing a national goal to control existing and new NPS,
- Developing additional national guidance to evaluate State programs, and
- Revising State NPS management programs to incorporate an adequate level of watershed planning, BMP design, water quality monitoring and assessment of progress.

A. *National Program Guidance*—ASIWPCA agrees with S. 1114 calling for USEPA to develop *guidance to be used in evaluating State NPS programs*. Consistent with the bill, this guidance should include:

- *A description of the NPS categories and subcategories,*
- *Program implementation criteria* appropriate for use in evaluating State programs,
- *Methods to estimate reductions in pollutant loads* necessary to protect water quality and achieve the goals and requirements of the Act,
- *Evidence of necessary local government authority and involvement* and
- *Recognition of critical habitats and ecosystems.*

Phasing: In addition, the Clean Water Act should more clearly emphasize the need to *progressively move towards controlling existing NPS through implementing water quality based BMPs in targeted watersheds*, consistent with the intent of the proposed Section § 321 on Comprehensive Watershed Management, but not as prescriptively as recommended for 319 in S. 1114. New sources and existing sources outside targeted watersheds are best handled initially through technology based BMPs.

Deadline: While ASIWPCA agrees that USEPA guidance should be developed as soon as practicable, 90 days is not sufficient to prepare a quality document or provide adequate State input. A short time period will only encourage premature adoption of the untested § 6217 Coastal Zone Act Reauthorization Amendments (CZARA) guidance.

B. *Revised State Management Programs*—ASIWPCA supports the need for each State to revise their NPS management program, consistent with USEPA guidance to:

- Adequately describe *their phased management strategy* for existing and new NPS,
- *Identify all targeted or priority watersheds,*
- *Establish a schedule* for starting implementation projects in targeted or priority watersheds within a time period identified in the Clean Water Act,
- *Establish a process* for determining NPS pollutant load reductions, critical sites and BMPs for targeted watersheds,

- *Establish schedules* which identify milestones to measure progress and
- *Identify a strategy to monitor accomplishments* of the NPS management program, as part of a comprehensive water quality monitoring program.

II. IMPLEMENTATION SCHEDULES

ASIWPCA does not support the 5 year implementation schedule called for in S. 1114. Although it may be possible to *establish State programs* to deal with new sources within 3 years of program approval, *it is unreasonable to anticipate controlling existing NPS* in such a short time. Any effort to implement for all critical NPS within 5 years will overwhelm all program delivery systems, to the detriment of the goal. As stated earlier, NPS control will be a long term mission. State experience indicates that the task is much greater than S. 1114 envisions.

For example, Wisconsin's NPS program is recognized as a leader and has substantial amounts of State funding being provided. The State has been implementing a watershed based NPS program since 1978. More than *15 years* of effort illustrate the order of magnitude needed and the time period required to effectively control NPS. Even with substantial efforts, Wisconsin is able to control only a relatively small portion of their critical NPS. The delivery systems are incapable of going much faster.

- 60 priority watershed projects have been initiated, addressing about one-third of the State watersheds with lakes and streams impaired or threatened by NPS. These projects involve thousands of farms and tens of thousands of needed BMPs.
- To date, over \$50 Million in State funds have been spent, with a FY 93 budget of \$17 Million
- These funds support the over 120 local staff implementing these watershed projects. Even at that level, Soil Conservation Service (SCS) staff cannot meet watershed needs. Moreover, engineering assistance demands far exceeded what SCS can satisfy.
- Due to such factors, Wisconsin statutes call for completing all watershed projects in 15 years, which is an extremely aggressive but reasonable goal. Despite the continuing and substantial support from its legislature, *Wisconsin's program could not meet the implementation schedule proposed in S. 1114.*

The schedule does recognize the extensive time required to build the support needed to enact strong programs, to implement them and to scientifically evaluate the results in order to make program adjustments. For example, North Carolina:

- Has had an animal waste cost share program for over 8 years, providing \$8 Million annually. In 1990 they decided mandatory BMPs were needed. It took until January 1993 to get the rules in place that will be phased in by 1994 for new sources and 1997 for existing sources. Eight years of concerted effort will be required to do what S. 1114 requires in 3.
- Passed a rule requiring BMPs around water supplies in 1989. Plans to implement those requirements are due in 1993 and actual implementation begins in 1994.

In short, quality programs take time. S. 1114's unreasonably short schedules risk public backlash and programs of inferior quality. The tradeoff is not worth it. States have to be able to prioritize and have time to build and carry out adequate programs. In addition, under S. 1114 there would simply not be enough funds, enough qualified staff in States, Local governments, and the private sector, or enough equipment and pickup trucks to come remotely close to meeting the deadlines.

ASIWPCA Recommendation:

Within 60 months after USEPA approval of revised programs, States should be required to, in a two phase process, evaluate implementation progress and propose reasonable revised implementation schedules as part of their NPS management programs. (See below for details)

III. ENFORCEMENT

Although enforcement should be part of the total approach to control NPS, mandating enforcement for all NPS is premature and may be counterproductive in the long-term. Enforceable approaches to controlling existing NPS are likely to be most successful if they are *coupled with* voluntary efforts and *used after* voluntary efforts have had an opportunity to work. More time is needed for State programs to be established and progress to be assessed.

ASIWPCA Recommendation:

- *Within 48 months of USEPA approval of revised State programs*—require States to evaluate progress in implementing their programs, including meeting water quality standards/designated uses and success of voluntary/incentive implementation mechanisms, etc.
- *Within 12 months of evaluating progress and every five years thereafter*—require States to update their management programs in a manner necessary to adequately deal with causes of water quality impairments or threats. The revised program should address, at a minimum, actions needed to achieve compliance with standards, including mandatory BMP installation, prohibitions on certain land practices and implementation of permits.

Enforcement for new sources should take into account the advantages of dealing with the source at the time of a major investment.

IV. FUNDING

Federal funding needs to be greatly expanded to assist States in implementing NPS management programs in a timely manner. The Clean Water Act amendments should move the national program beyond demonstrations to *full scale implementation* of controls that meet water quality standards in an efficient and effective manner. Since 1987, States have made progress in NPS control and program development. However the rate of progress has been severely limited by a number of factors, particularly inadequate funding.

Congress must recognize the long term commitment of resources needed. At least a 6–8 year period of sustained financial support is needed to build the foundation to achieve the necessary rate of progress.

ASIWPCA Recommendation

Funding should come through a number of vehicles, including Section 319. Although, the State Revolving Loan Fund is a viable source, at present it lacks an adequate institutional mechanism to repay loans. Therefore, Section 319 will continue to have a vital role.

- *Eligibility:* 319 funding assistance should cover all aspects of the revised and approved State nonpoint source management programs.

ASIWPCA Recommendation: Eligibilities under 319 should include the following which may include local program institution and 319 plan updates:

- State level administration,
 - Targeted watershed problem identification,
 - Pollutant load reduction determination,
 - Critical site identification,
 - BMP identification and implementation planning,
 - Technical assistance,
 - Education assistance,
 - Enforcement activities and
 - Financial assistance to install BMPs where needed.
- *Distribution:* To be effective and taken seriously, the program must transcend the demonstration mentality to become a mainline program. The present process of work plan development and review is not manageable at increased funding levels. Funds should be distributed to states—with no set-aside for “beauty contest” competitive projects at USEPA. S. 1114 goes only part way, allocating 50% of the funds by formula. This implies a “208 type” project by project process for the remainder of funds, which historically has not worked well in achieving the Act’s goals.

ASIWPCA Recommendation:

All authorized funds should be allocated to States to carry out activities identified through approved State NPS management programs.

- *Economically Achievable Management Measures:* S. 1114 calls for implementing management measures that must be, by definition, economically achievable. While it is important that BMPs be reasonable, it is unlikely that water quality standards will be met if NPS controls are limited to management measures that are economically achievable without financial assistance. For example, based on USEPA’s Economic Achievability Analysis for implementing § 6217 of the CZARA, costs to control animal waste on dairy farms in many upper midwest and northern States cannot reasonably be born by the farmer without financial assistance. By definition, therefore, in S. 1114, implementing these management measures is not economically achievable.

ASIWPCA Recommendation:

Cost sharing for BMP installation should be available, based on need, even when installation does not meet a test of "economically achievable."

- *Incentive Grants:* While S. 1114 proposes incentive grants to encourage installation of BMPs, the limitations specified (up to 50% of project cost and a limit of \$5,000 per year) make the incentives too low and too restrictive to control many NPS in a practicable and timely manner. More flexibility is needed. For example, based on the experience in Wisconsin's State funded program, animal lot runoff controls cost over \$15,000, while needed manure storage facilities cost \$20,000—or a total of at least \$35,000 per livestock operation. Statewide, the cost to control animal waste sources on 15,000 to 20,000 livestock operations exceeds \$500 million.

ASIWPCA Recommendation:

S. 1114 should give States more flexibility. Given the situation in Wisconsin, Michigan and other upper midwest States alone, a 50% incentive grant or a low interest loan can be insufficient to make BMP's economically achievable. The limit of \$5,000 per year is impracticable when dealing with such costs.

- *Funding Level and Matching Requirements:* Funding is needed commensurate with the program established under S. 1114. Unless refinements are made as recommended above, the proposed authorization will be grossly inadequate.

ASIWPCA Recommendation:

The streamlined program recommended above requires for:

FY 1994-96:\$500 Million annually
For FY 1997-98:\$1 Billion annually

The existing 40% match requirement should be retained. Funds not used by a State or other eligible recipient should be available for redistribution to other States.

SUMMARY

- S. 1114's objective should be to build the State NPS programs needed over time to achieve water quality goals. It *assumes*, instead, that foundation is in place to carryout the BMPS prescribed—when that is not the case. States should be accountable for achieving that objective. USEPA should oversee their program development and support activities through funding, research, technology development/transfer and better standards. Such a partnership can produce more broadly supported programs that achieve water quality goals much faster. In many ways, the bill must "reinvent" historical government relationships.
- States should be responsible for setting priorities and determining with Local governments, etc, cost-effective approaches to improving water quality. S. 1114 "over-Federalizes" by defining and micro-managing activities down to the local level, with an *untested* CZARA approach. Historically, the Federal government has not performed well in such endeavors, whereas State and Local governments can.
- The Clean Water Act should put into place an improved national framework to achieve the above objective, relying on State programs, with iterative water quality based management in targeted watersheds and pollution prevention for new sources.
- NPS control is best achieved through a mix of voluntary, incentive, educational and mandatory approaches. States should evaluate revise/update their NPS programs periodically, including enforcement and other refinements as needed.
- The implementation schedules in S. 1114 should be more reasonable given the nature and extent of the nonpoint sources, intensive multi-agency activities necessary, likely resources and delivery system capabilities.
- The Act should not perpetuate the demonstration program S. 1114 needs to do more to support, instead, implementation of approved State 319 programs. Adequate Federal funding eligibility for all parts of State programs is essential to achieve water quality goals in a timely manner.
- Success depends upon adequate 319 funding (\$500 Million to \$1 Billion annually) and the ability to leverage other Federal programs through consistency requirements.
- S. 1114 needs more adequate incentive grants for BMPS that are not economically achievable without financial assistance.

Mr. Chairman, the States and our Association appreciate the opportunity to present our views on the Nonpoint Source program. We are available at any time to work with you and/or your staff on these key issues. Please contact our Executive Director, Roberta (Robbi) Savage at 202-898-0905, if you wish further details or would like additional State input.

STATEMENT OF THE COASTAL STATES ORGANIZATION, INC.

As a representative organization of the Governors of the 35 coastal States, Commonwealths and Territories of the United States, the Coastal States Organization appreciates the opportunity to submit our comments on the Nonpoint Pollution Control Provisions of the Water Pollution Prevention and Control Act of 1993, S. 1114 to this Subcommittee. Founded in 1970 the Coastal States Organization represents the collective voice of the coastal State Governors on ocean, Great Lakes and coastal affairs. Due to our experience in implementing the coastal nonpoint pollution control program over the last three years, we have an intense organizational interest in the nonpoint pollution control provisions of S. 1114.

The coastal States have been the leaders in addressing the problem of nonpoint source pollution, and recognize the need for a more comprehensive and effective approach than that currently prescribed in § 319 of the Clean Water Act. We believe that S. 1114 makes significant progress towards enhancing the Clean Water Act's nonpoint source pollution control program. At the same time, we believe that several points must be considered.

Keys to a Successful Nonpoint Pollution Control Program

COORDINATION WITH OTHER FEDERAL PROGRAMS: Section 304 of S. 1114 provides for consistency with other federal nonpoint control programs, specifically agricultural and highway construction programs. Conspicuously absent, however, is any mention of the coastal nonpoint pollution control program being implemented under the Coastal Zone Management Act. This program, commonly known as the CZMA § 6217 program, is well underway, and should be coordinated closely with the nonpoint pollution control program under § 319 of the Clean Water Act.

The CZMA § 6217 program statutorily requires States to submit to EPA and NOAA their coastal nonpoint pollution control programs for approval in July 1995. Many States are revising their Clean Water Act § 319 programs as part of this process. Further, program revisions are required under § 6217 if water quality goals are not attained.

The provisions of S. 1114 must recognize these efforts. If S. 1114 is enacted as is, States would be required to revise and submit their programs to EPA *again* in 1996. Care should be taken to avoid placing the States in an endless cycle of plan revision which will be at a cost to plan implementation.

SCIENTIFIC FOUNDATION FOR CONTROLLING NONPOINT SOURCES: The monitoring provisions contained in § 301 of S. 1114 are much needed. However, they should be more focused on providing technical assistance to the States, especially in detecting and quantifying nonpoint source pollution. Identifying the linkage between nonpoint source pollution and land use is often tenuous. Hard data, and the means to acquire it, is needed for effectively controlling nonpoint pollution, especially if regulatory enforcement actions for controlling nonpoint sources are to be sustained in the face of inevitable legal challenges. EPA and NOAA have a wealth of expertise, monitoring and modelling capabilities that are not adequately utilized to meet immediate coastal management needs. States need federal technical assistance to identify nonpoint sources and gauge the success of their control efforts.

FLEXIBILITY THROUGH MULTIPLE APPROACHES: S. 1114 requires States to ensure that management measures be enforceable, much the same as the CZMA § 6217 program. However, S. 1114 contains considerable more flexibility than § 6217. First, it allows for recognition of regional variation in the implementation of management measures. Second, it allows for consideration of the economic capability of the affected land or water user to implement management measures. The flexibility provided in S. 1114 is necessary to obtain the public support crucial to the successful local implementation of this program. The Coastal States Organization supports this flexible approach in S. 1114.

S. 1114 recognizes the need for enforceable requirements where other means have not effectively promoted the adoption of nonpoint source control measures. However, by itself, a regulatory regime for controlling nonpoint source pollution will not work. The resources to patrol the broad and diverse scope of sources of nonpoint

pollution are simply not available. Developing and implementing nonpoint source control programs, as well as monitoring compliance and the effectiveness management measures is very labor intensive.

We strongly recommend that changes to § 319 allow States to prioritize their resources according to the significance of their problems and their ability to address those problems. A graduated, flexible approach for controlling nonpoint sources is needed, one which is tailored to each type of source.

LINKING FEDERAL SUBSIDIES TO RESPONSIBLE LAND USE: S. 1114 takes a "get serious, no more excuses" approach to controlling nonpoint pollution. We could not agree more. To this extent we urge the Committee and Congress to come to grips with the role of leveraging agricultural subsidies to promote measures to control agricultural nonpoint pollution. The solution to the problem of agricultural nonpoint pollution is not to provide more subsidies as incentives not to pollute, but to make the provision of existing subsidies contingent upon responsible agricultural practices. We realize the difficulty Congress faces in trying to address this issue given the split of committee jurisdiction. However, State authority is also split among many State agencies, yet these agencies must be able to come to terms with each other in order to meet federal mandates. There is no reason that the Federal government should not hold itself to the same standard of coordination and cooperation.

PUBLIC SUPPORT: The public must understand the serious problem of nonpoint source pollution and its relationship to land use in order for them to support an effective nonpoint source pollution control program. Public participation in the revision of nonpoint pollution control programs should not be confused with public support. There is no doubt that there will be broad resistance from coalitions of affected users challenging efforts to control nonpoint source pollution. Public support for an enhanced § 319 program envisioned in S. 1114 will only come about through public education, a process which is likely to take many years to accomplish. Building broad public support for the widespread implementation of management measures will take a concerted effort with federal assistance.

ECONOMICALLY PRACTICAL SOLUTIONS: Section 304 of S. 1114 recognizes the need for economically practical solutions of controlling nonpoint sources by authorizing the States, with EPA approval, to adopt alternative requirements with respect to specific sources of nonpoint pollution. In many cases, no single management measure will be effective in controlling a nonpoint source. The assessment of economic capability of implementing management measures must also consider the combined costs of multiple management measures. For these reasons, we support the "economic capability" approach of § 304.

ADEQUATE FINANCIAL SUPPORT: Controlling nonpoint source pollution is expensive, especially for existing sources in urban areas. The costs of controlling some sources of nonpoint pollution may be prohibitive without federal financial support for implementation, monitoring and enforcement. We support the increased authorization of appropriations under this section, but in view of the terribly tight fiscal constraints on the federal government, we continue to be concerned that actual appropriations will remain far below the authorized spending levels.

FEDERAL AGENCY REGULATION OF LOCAL USE: S. 1114 requires EPA to publish regulations to implement enforceable minimum control measures in the event that a State fails to submit a revised nonpoint source pollution control management plan. We must note our concern with this provision because it raises questions about the ability of a federal agency to regulate local land use, an area of the law that has a long-standing tradition of being the primary responsibility of State and local governments. Beyond the legal policy questions, we also question whether EPA, from a practical standpoint, has the capability to enforce the implementation of site specific management measures.

Conclusion

We appreciate the opportunity to submit these general observations to the Subcommittee at this time. The Coastal States Organization is continuing to analyze and review the nonpoint source pollution control provisions of S. 1114, and will be submitting more detailed comments for the record in the near future.

Thank you.

REAUTHORIZATION OF THE CLEAN WATER ACT

TUESDAY, JULY 27, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

WATERSHED PLANNING AND MANAGEMENT; MONITORING AND ENFORCEMENT

The committee met, pursuant to notice, at 2:15 p.m., in room 406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Durenberger, Faircloth, Chafee, and Lautenberg.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. I call the meeting to order.

This is the fifth in a series of hearings on the reauthorization of the Clean Water Act. Today we turn our attention to two issues: watershed planning and enforcement.

Watersheds are the areas that drain into a common outlet such as a river or lake. As early as 900 B.C. the Chinese understood how watersheds work and their importance to human activity. They had a proverb: "To rule the mountain is to rule the river."

Today, most of those who have studied the matter agree that we must control what is discharged into the watershed if we are to clean up rivers, lakes, and streams into which they drain. They believe this is especially true as we try to tackle our largest remaining water quality problem: nonpoint source pollution.

Watershed planning is not a new topic in the Clean Water Act. The 1972 Clean Water Act established a program entitled section 208 of the act that was designed to identify all waste—point and nonpoint—generated in a specific region and to plan for structural and nonstructural means to prevent their discharge. Unfortunately, the 208 process was not a great success, in large part due to limited funding. It has also been criticized because it emphasized planning and provided no financial assistance or incentives to link planning with implementation of nonpoint source control measures.

Despite the failures of this program, many States have taken the lead in watershed planning and we will learn about some of those efforts today in the States of North Carolina and Rhode Island.

An argument often made for watershed planning is one that has been repeatedly made in our previous hearings. People relate to the waters where they live, work, and play. A key goal of watershed planning is to motivate and educate the community as to the causes of pollution of neighboring rivers, lakes, and streams. This is important because our most difficult problem, nonpoint source pollution, is not just an agricultural problem. It affects the way we all live and dispose of substances that rain washes into our lakes and streams.

Human nature tells us that this goal is easier to achieve when the watershed is relatively small. People are simply more likely to alter their lifestyles for the benefit of those downstream if they feel a sense of connection. Thus, the definition of the watershed becomes an important issue.

Those who advocate watershed planning also tend to emphasize its flexibility: its recognition of the fundamental differences between the soil and hydrology of a State like Florida and a State like Colorado. Watershed planning can recognize the difference between a river whose watershed is populated with dairy farms and one that is home to industry or suburbs.

Watershed planning is not without potential problems. Watersheds do not recognize jurisdictional political boundaries, whether they are State lines, counties, or cities. When the time comes to implement a plan, much less develop it, there are many intergovernmental disputes that must be addressed. We will explore these problems today and see how they might be resolved.

We are also likely to hear concerns today about whether Congress should require States to engage in watershed planning and to do so on a State-wide basis. The bill before us takes a more modest approach. It encourages States to plan watersheds and emphasizes those watersheds that are impaired.

Every night the news tells us of the problems we face when watersheds are flooding. Looking at the devastation that is occurring in the midwest from the floods, I am reminded of the lessons we learned at our first hearing about the way rivers draw people to them and how we alter river basins to sustain human activity. While these floods are primarily the result of extraordinary natural occurrences, they also serve as lessons to us on the manner in which we impact rivers and how we plan or fail to plan for the growth near them.

It is with this in mind that I look forward to the discussion today on our first topic.

Our second topic is also important because we know that pollution does occur, despite our best efforts, and we must take action to prevent it when we can. The Clean Water Act provides the EPA and States with many enforcement weapons against polluters. Perhaps as important, the act also empowers citizens to bring civil actions. Many believe that we need to strengthen the enforcement arsenal both for the agencies and for concerned citizens. Our second panel is likely to present us with different perspectives on how we should proceed.

We will conclude our current series of hearings next week with two hearings on August 4th and 5th. We will be holding an additional hearing on wetlands in September.

As can be seen, we are again using an informal format. Because we wish to use this format to facilitate discussion, I will ask our witnesses to very briefly summarize their statement, if they feel that they can do so, and in no event take longer than 5 minutes. Your full written statements will be made a part of the record. At the conclusion of all the statements from each of the two panels, we then look forward to a very constructive interchange of ideas and questions.

Having just made the announcement of brevity, I will now break the rule.

I believe Mr. Tedder has a brief series of slides and his presentation may somewhat exceed 5 minutes. I felt that this was important so that we could put some specificity and tangibility behind the concept of watershed planning. I believe that his remarks will be a useful introduction to the topic.

We are joined by two of our colleagues today, Senator Faircloth and Senator Durenberger.

Do you have an opening statement?

Senator DURENBERGER. None.

**OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S.
SENATOR FROM THE STATE OF NORTH CAROLINA**

Senator FAIRCLOTH. Yes, I do have a very brief one. Thank you, Mr. Chairman.

I would just like to introduce one of our witnesses, Steve Tedder. Steve is from North Carolina and he is chief of the water quality section of the North Carolina Division of Environmental Management. He will be testifying today not only on behalf of North Carolina, but of his colleagues in a similar position around the country.

Steve has been with the North Carolina water quality division for 17 years and has done an excellent job. In fact, North Carolina is the Nation's acknowledged leader in watershed planning. We are way ahead of the game, we are way out front, and we intend to stay there. Steve and his colleagues deserve a great deal of the credit for putting us there.

I thank him for being with us and I look forward to him bringing a real-world common-sense approach to what we are talking about from someone who has been in the business for 17 years and understands how it works.

Steve, thank you for being with us.

Senator GRAHAM. Thank you, Senator. You have just provided a wonderful introduction to one of the members of our first panel, who I will call upon to be the first witness in that panel.

Also, we are joined today by Mr. Blake Anderson, county sanitation district of Orange County, California; Mr. Charles Gauvin, president of Trout Unlimited, Vienna, Virginia; Mr. Curt Spalding, executive director of Save the Bay, Providence, Rhode Island; and Ms. Lorna Stickel, representing the Western Governors Association, based in Denver, Colorado.

I thank each of you for being here today in what I know will be a very constructive discussion.

Mr. Tedder?

STATEMENT OF STEVE TEDDER, CHIEF, WATER QUALITY SECTION, ENVIRONMENTAL MANAGEMENT DIVISION, STATE OF NORTH CAROLINA REPRESENTING THE ASSOCIATION OF STATE AND INTERSTATE WATER POLLUTION CONTROL AGENCIES

Mr. TEDDER. Thank you, Mr. Chairman and members of the committee for this opportunity and this vehicle for my counterparts and myself to address the Clean Water Act and possible changes in the Clean Water Act, especially on the topic that we are going to discuss today on watersheds because this is an extremely critical part of our programs and a critical part of the focus of many of the programs across the country right now.

[Slide presentation.]

Mr. TEDDER. Basin-wide water quality management, as was mentioned earlier, is not new. Many States have already started employing various techniques at various scales. I think it is very encouraging that we are seeing that already and now we are seeing some reflection of that in the Clean Water Act.

As we look at the North Carolina program, on this map you will see 17 basins in the State of North Carolina. We really have adopted a scheme and a method to move forward with 17 individual basin plans at this point. So we have actually taken the approach to include the entire State of North Carolina in our planning process for the basin-wide or watershed approach.

What is the goal? What are we looking for as we develop these 17 individual plans?

We are trying to develop a consistent yet effective long-range plan, something that we can move toward. We have to be cognizant that it is not quick. It is an evolving process that we must acknowledge as we go through this approach. It will not happen overnight.

This allows us to focus efforts and resources, which for the States is extremely critical. We will never have the resources to do all of it at one time, so we have to look for these unique mechanisms to be able to focus those resources, our monitoring, our assessments, and our permitting. For our approach, it is not a new regulatory program. I think that is extremely important. We are dealing with the existing rules, regulations, and statutes that we have to try to more effectively implement those regulations.

It is a way to see the big picture. I think that is extremely important as we work to protect water quality. It is an evolutionary process. The way our system is set up, it will be revisited every 5 years for each basin across the State, for the first time a very good opportunity to integrate both the point source and nonpoint source control efforts into a single plan to address the problems of specific basins.

So we have the framework to address many of the areas that we have not in the past. At the bottom you will see one that is very important, which is to lay out a plan not only from an educational standpoint but to allow the public to participate in the process. We provide this citizen input through public hearings. We have allowed considerable public input through the entire process of the basin-wide.

Why basin-wide? At least in North Carolina—and I know it is the same in every State—watersheds themselves are very different. Therefore, the solutions to the problems are going to be very different in each watershed. We cannot treat them the same. It is an investigative process to find out what the problems are in a particular watershed and what is responsible for those problems.

Yes, it can still be point sources. We have not solved all the problems with point sources. At the same time, in a particular watershed it may be sediment. It may be from an agricultural operation. Or it could be nutrients from the homes and developments. A variety of areas could cause these problems that are going to be very distinct in each basin, in each watershed that we evaluate.

So the causes are very different and those pollutants—those issues of concern—this graph will look extremely different for every watershed that we evaluate and every basin or watershed in any State will look very different from this one. If we look at the nonpoint sources, there are several areas that we have to concentrate. We have to rank and look at and focus our resources. In one basin, it may be agriculture, but yet in another basin it may be forestry. With the planning process it allows us to rank our efforts as to which ones we have to identify and develop new avenues to address problems in those areas.

Those different areas are different also in each basin. The chart will be broken up very differently each time.

It is very interesting that it allows us the ability to focus on problems. In North Carolina, as you will know, it is an agricultural based State. Yes, it has been the sacred cow for many years. This approach has allowed us to work together with the other agencies to focus on the problems, to target certain areas. In North Carolina, we have been targeting certain areas that we need to address either through new rules and regulations or how to use the regulations that are on the books more effectively.

Our point source controls are there. They are very ingrained in the program. It is not new, but we still have problems. We will always have problems that we have to address through our enforcement mechanisms. I think these are very evident. As we address those problems, we have to acknowledge that they are not consistent problems. Those same situations may change on a daily basis. We have to be aware of that and we have to tailor our approaches to meet those demands.

This leads into the enforcement part. This is a very important aspect of are program—and I know you are going to talk about that today. As we have modified certain things, we are seeing improvements. Don't let anybody kid you that improvements are not being made in the environmental programs, because they are. I think this graph displays that very readily. And there are different ways to accomplish this.

As we embarked on the watershed approach, we also looked at different ways of enforcement. I think you can see on this graph in 1990 that there was some type of subtle change in the program to increase our enforcement activities 500 percent with the same staff that we had before. The monitoring is critical. That is the reason that watershed planning takes time.

But is it more efficient? The answer is yes. I think you can see from this graph, which displays—pre and post basin-wide monitoring efforts—the increase in the level of effort that was allowed using the very same level of staff.

As we look at the approach, what is different? One of the things that we have done is to have all the permits in each basin expiring at the same interval. Therefore, we can address those problems and make changes more rapidly. The studies are not scattered, they are focused. Most importantly, there is a plan.

What is the watershed approach? It is everything we think of in a water program combined into one. We need to get away from the fractionalization of the programs and independent way of doing business and pull these into a focused concept, as well as the funds. Let's not treat these as separate. It is a water quality program, and that is how we must work this we are to be successful. Let all those program component, be watershed protection.

We see these issues as the major keys to success. We must eliminate some barriers for sure. We seek consolidation of efforts, whether grants or reporting, as very important to allow the States to move forward without substantial resources for the basin-wide approach. Of all of these, the one that is most important is that one size does not fit all. We must allow that flexibility within the States to work within their resources to make the basin-wide approach work.

I don't think you can mandate success. You have to let success gradually occur, because it will happen. The movement is occurring across the country right now. Let's encourage it. Let's not get in the way of that momentum.

The Clean Water Act, currently encompasses numerous places that already clearly indicates that basin-wide is here. The mechanisms are here. the directions are already in the Clean Water Act. Let's not jeopardize what is there.

Yes, the level of programs and the expectations of each of the programs are increasing drastically. We will never fund all the expectations. Let's look at what is causing the barriers to the States to implement a watershed approach. To more efficiently address these issues I think would be heading the right direction.

As we in North Carolina and the other States across the country move forward with specific basin plans, there is a movement out there of support. It will take time and it will not happen overnight. It will not happen in 3 years, I can assure you, because it takes time to put these together if you are going to have an effective plan.

Look at the keys. It is more efficient; it is more effective; and it is predictable. I think it is important for the regulated community to have some predictability to the process. It allows better resource management and it is politically achievable.

What does it do? It does a lot for the public. It allows us to educate the public, to provide them information on the watersheds in their backyard where they are going to have an interest.

We have to quite juggling the resources. We have to focus the resources if we are going to be successful in our programs. I think a lot of the States have the staffing. We can eliminate the complications and delays if we are thoughtful and careful with the Clean

Water Act reauthorization. I think we can do it with very minimized increased costs. If there are any doubts as to whether it can be successful, the answer from North Carolina is no, there is no doubt. We can be successful in this effort, but we have to look at it from a very holistic measure and look at it from a watershed basis. We think that is very essential to the success of the program.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much, Mr. Tedder. Any presentation that can go from Sherlock Holmes to Miami Vice and end with Planet Earth is wide ranging.

[Laughter.]

Senator GRAHAM. Mr. Anderson?

STATEMENT OF BLAKE ANDERSON, COUNTY SANITATION DISTRICT OF ORANGE COUNTY, CALIFORNIA, REPRESENTING THE ASSOCIATION OF METROPOLITAN SEWERAGE AGENCIES

Mr. ANDERSON. Mr. Chairman, what you will hear from me pretty much parallels what you just heard from Mr. Tedder.

AMSA strongly endorses the concept of comprehensive watershed management. We see it making incredible sense from a local perspective. It gives us the flexibility and the accountability to move toward site-specific solutions to real problems within a watershed. We see it as really where the bold action needs to be taken by the Senate in moving toward a new model for managing water quality into the next century.

We see watershed management as an umbrella under which the existing provisions of the Clean Water Act can operate. It gives us the opportunity to first look at what the resources are within a watershed that need to be protected; second, look at what the sources of pollutants and impacts are; third to look at the alternatives that are available for us to solve the problems; and fourth, it gives us the enforcement provisions that allow us to make sure that promises made are promises kept.

Today, water quality standards are pretty much dictated in a top-down way of looking at things. There are national standards which drive permit conditions, which then drive the facility and construction and operational decisions that drive the programs that are in existence today. At this point, there is really little thought to the environmental and resource response to these activities. Comprehensive watershed management will allow us to look at local conditions, and on that basis develop a management plan. From that management plan we can begin to implement the expenditures of resources to address those issues, and then monitor the effects. Then it feeds back up to the top.

As Mr. Tedder said, it is a long-term iterative process to really understand where the resources are being impacted and what we can best do to effect improvements.

I would like to give a little input on S. 1114. First of all, it does give the governors the ability to voluntarily designate watersheds and create watershed management plans. We endorse the concept, but we believe that it should go farther. We believe that it should not be voluntary, that it should be mandatory. We think that will drive the entire country along on an even basis. It will keep a level

playing field throughout the country and will assure the steady movement toward improved water quality.

S. 1114 gives the governors the ability to designate management entities that send completed plans to EPA for approval. We endorse the concept, but we think you need to go farther. First of all, you need to define who is on the commission, and the commission should include State, Federal, and local government. It should include the major stakeholders, sources of pollutants as well as the people who are using the watershed for all its beneficial uses.

Citizenry and environmental groups all need to be at the table as coequal partners discussing the direction in which the plan is headed, the schedules and time lines that are going to be established, and finally the priorities that the people within the watershed are going to use to make progress toward water quality improvement.

We also think the commissions need to be empowered to make the final decisions. Right now, S. 1114 says that the plan, once completed by the management entity, is passed onto EPA for approval. We believe that EPA should be at the table at the time the plan is being designed and that all the people within the commission make the considered judgment of how the plan should be completed. On that decision, the plan then moves forward. Moving things to some kind of an administrative fiat hundreds of miles away from the point of action will just invite regulatory gridlock. You must have everyone participating in the decision.

One final note is that we really see S. 1114 and comprehensive watershed management as really being an umbrella under which existing mandates are operated. It is really not asking for anything new. It is simply clarifying and streamlining the process that must go forward for improved clean water objectives.

Senator GRAHAM. Thank you very much, Mr. Anderson.

We have been joined by the ranking member of the committee and this subcommittee, Senator Chafee of Rhode Island.

Senator CHAFEE. Thank you, Mr. Chairman.

I am delighted that Mr. Curt Spalding, head of Save the Bay in Rhode Island, our largest environmental organization, is here to testify. I look forward to hearing his testimony and the others likewise.

Senator GRAHAM. Thank you.

Mr. Gauvin?

STATEMENT OF CHARLES GAUVIN, PRESIDENT, TROUT UNLIMITED

Mr. GAUVIN. Thank you, Mr. Chairman.

I would like to say that I am glad to be here. On a personal note, it is the first time I have ever testified before Senator Chafee. I am a former constituent of his and used to work with Save the Bay, which is the organization that Mr. Spalding heads, back in the days when the Providence sewage treatment plant was putting into the bay what we euphemistically called "grease balls". That situation has been cleaned up.

I am very happy to have a chance to give you Trout Unlimited's—

Senator CHAFEE. Mr. Gauvin, nothing breaks a politician's heart more than to hear that an admiring individual turns out to be a former—

[Laughter.]

Mr. GAUVIN. Thank you, Senator.

I am pleased to present Trout Unlimited's views on this very important piece of legislation. I would like to say that our biggest concern with the triad of objectives in the Clean Water Act—namely, the restoration and maintenance of the chemical, physical, and biological integrity of the Nation's waters—really has to do with the biological integrity. The problem that we see around the country with cold water—namely, Salmon and Trout habitat—is that you have, despite the appearance of attainment status with water quality standards, you have more and more extirpations of local populations and genetically distinct stocks of fish, which causes us great concern.

This situation collectively I have chosen to call a biological deficit. When I use that term I refer to situations such as the scores of Pacific Salmon stocks that are in jeopardy of extinction throughout their range, such as the stocks and populations of other native Salmon in the inter-mountain west which are endangered or threatened and to summarize the overall situation, which involves a third of all our native freshwater species that are threatened or endangered and a fifth of all our aquatic species that are now threatened.

This, to me and to our organization and to other conservationists, is a potential loss of unprecedented and unconscionable biological, economic, social, and cultural dimensions. It is a great potential loss of biological diversity. Needless to say, our aquatic habitats, our economic life, our social life, and our cultural life will be greatly affected by it if it is to occur.

So much of this loss has to do with habitat degradation and so much of that has to do with the conditions of our watersheds. I think S. 1114 is an important step in the right direction. I think there is much in the bill that could be used to protect our watersheds and to make life a little bit better for some of our native and wild Trout, Salmon, and other fish species.

I would like to give you some specifics as to how I think the bill could be improved. In section 301 of the bill, the basic introductory and fundamental planning section of the bill, it seems to me that if you have—if the term biological integrity in the act is to mean anything, then we have to protect species diversity. We have to protect the species diversity that is in healthy habitat and we have to ensure that unhealthy habitat is restored and that it regains species diversity.

In many cases, that won't occur, even if the habitat in question meets current water quality or future sediment standards. We have to look at biological monitoring, biological assessment, we have to monitor for those conditions, and we have to incorporate those standards in the planning and other guidance mechanisms of the act.

In addition, when you are talking about a balance of indigenous populations of fish, shellfish, and wildlife, again the important thing is diversity. It is at least as important as balance. Unhealthy

habitat and a depressed condition will achieve its own balance, but it is not biologically healthy. In order to be so, it must be diverse.

As far as the monitoring provisions of section 301, I would like to suggest that monitoring capture the effects of nonpoint and other pollutants on all sediments, in the water column, and on all significant populations of aquatic biota. I would like to see that biota provision added in the monitoring provisions of the bill.

I would also like to suggest that really no watershed planning and assessment is adequate unless you also look at the problem of in-stream flows. In know in-stream flows—the jurisdictional situation under the Clean Water Act is extremely qualified, but for planning purposes and assessment purposes, we really ought to be looking at in-stream flow issues whether hydropower projects or other kinds of diversions—dams and other diversions are at least as big killers of fish as the things we normally consider pollutants.

Finally, we would like to call upon the committee to consider requiring uniform attainment status so that we no longer have a situation in which some States water is in attainment at a particular standard or partial attainment and in other States—or even within the State—you have other waters that are not so in attainment.

Finally, I would like to suggest that with respect to the other component of the bill, the thing that really makes the bill work, the nonpoint area of the bill, that there is some room for improvement. Again, I think biological integrity of the water has to be the focal point of nonpoint source regulation. I think you need to avoid incorporating a position that will not result in the weakening of point source regulation as we move forward, all on the mistaken assumption that existing waste load allocations accurately capture either the existing nonpoint sources or the new point source loadings of pollutants.

In this connection, I would like to comment to your attention Representative Oberstar's bill on nonpoint which seems to me to do the job a little bit more forcefully and in a more biologically sound direction than S. 1114.

We at Trout Unlimited have some experience with watershed protection and restoration. A good example is our recent to protect and restore Norman McLean's beloved Big Blackfoot River in Montana.

I think the bill before the committee is directionally correct, sound in many respects, but it still needs to be strengthened to yield effective watershed protection and restoration.

Thank you.

Senator GRAHAM. Thank you very much.

Mr. Spalding?

STATEMENT OF CURT SPALDING, EXECUTIVE DIRECTOR, SAVE THE BAY, PROVIDENCE, RHODE ISLAND

Mr. SPALDING. Thank you very much, Mr. Chairman. And thank you to the committee for allowing me the opportunity to come all the way from Providence, Rhode Island to testify.

Some of you may be wondering, Save what bay? For those in the audience who haven't been to Rhode Island, it is Narragansett Bay.

Save the Bay represents 15,000 members and we are dedicated to a clean and healthy Narragansett Bay that people enjoy.

We have been around for 23 years. During that period, we have had extensive experience with strategic environmental planning. In effect, watershed planning is another version of that initiative or idea. We have done 208; we have done CRMC plans, which are special area management plans under the Coastal Zone Management Act; and we have done a CCMP, a comprehensive conservation management plan, for Narragansett Bay under the national estuary program. Under that, of course, there were several watershed initiatives.

So we have had our share of experience working in this kind of forum. We decided to sit down and think a little bit about what works and what doesn't when we're talking about watershed planning and distill our experience in that area. I guess I am going to serve to emphasize some of the points Mr. Tedder made and then move on and talk about when we think a watershed plan should be done, and then talk a little bit about how we think S. 1114 can be improved a bit.

I say that with the full support of the initiative that is before us today, this legislation. The emphasis on watershed planning is important and I think that this bill, when finished, will be a big step forward.

Let's talk about what works in watershed planning or strategic environmental planning as a rule.

Getting the stakeholders involved has been talked about and touched on quickly here, but you cannot emphasize that enough. We have seen planning experiences in Rhode Island where in fact some whole segments of stakeholders were virtually ignored. Some of the problems with our conservation management plan, or CCMP, was that the coastal zone management agency was virtually ignored. I think it must be a mandatory provision that the management entity actually reach out to those stakeholders and actually identify them and actually bring that list forward to the public in a way so that anybody who may have been missed would have an opportunity to raise their hand.

Targeting issues has been talked about as how this process can help us set priorities. That is critically important. It is easy for those of us who are environmental advocates to say that everything is important. Sit us down and work through the issues. Make us say that the progress we have made on toxics is pretty good so far in this watershed. Our critical issue is nutrients. Let's all do something about nutrients on all levels of government. That is an example of the process that must be done to make a system like that work. Otherwise, it becomes just a big pile of actions that people can't identify as to why you are doing what.

Accountability in monitoring is critically important. You have to evaluate where you have gone and where you are going. Volunteer monitoring is something that we are very involved in at Narragansett Bay. It has to be a critical part of that. It is the only way I think you can monitor these watersheds effectively. The resource base in these States are very small—and I will touch on that when I close my remarks.

A final point is that this is definitely iterative. Our experience is that you do a plan, you knock off a couple of things—let's say the nutrient problem or the toxic problem—and then you step back and look at your evaluation and say, "Let's do some more," and you work your way down the list. You have to think of a watershed as a little like a room. If it is all messed up when you walk in, if you try to do it all at once, you can't. You have to start to make lists to get things done. I think it is very important that these plans do that. That is how it would relate to the average person. They need to see lists and they need to see actions and they need to see things that really lead to outcomes.

From our standpoint, when to do a watershed plan—we very much support the idea that the point source program and the nonpoint source program and stormwater regulations should be implemented and implemented fully, but this shouldn't become a process where we can start to question where we are going on those other initiatives. What do I mean by that?

We have a river called the Patuxent River that is grossly polluted and we have three sewage plants on that river. They have all had to do advanced wastewater treatment, but they are now in the permitting phase. The politics of that could have overwhelmed us if we were in a watershed planning type of forum. These cities are in fiscal crisis, but there really need to do this advanced wastewater treatment.

Nonpoint sources are much more difficult to quantify and it is very easy to push the blame off to those sources. So we have to be very careful as we move forward using a whole watershed approach. Our thinking is to do your point sources, do the very best you can with nonpoint sources using management techniques, and then when you need to go further—especially into the activities and powers of local government—bring in this watershed approach and really involve local government at that point. After all, they have the most power in this whole format.

Save the Bay favors things such as stormwater utility districts. That has to be done on a local level. Setbacks from rivers have to be done on a local level. Things that really make a difference in the long-run will be done on the local level.

I guess I want to point out a couple of things that we see as critically important to improving this legislation. First, we would urge you to consider putting a solid matricide for doing watershed plans. I think honestly that if Save the Bay had been forced to go the State Legislature and say, "We need 25 percent of the money to go ahead and do this CCMP for Narragansett Bay," we would have engaged the local politicians in the process and we would have moved forward. When we got all done, they said that we had to be committed because of the investment. We think a local match is very important.

Watershed management plans should be mandatory for areas of non-attainment. I think that has been discussed, so I will move on.

There should be a requirement to incorporate previous watershed management efforts. One of the frustrations we have had is that it seems as if history starts with every new government program. We don't go back and look at 208, look at the CCMP, look at the myriad of plans that have been done.

The requirements for public participation need to be better defined. The term "maximum extent practical" means nothing to the local advocate. We need to define that public participation and establish how issues are identified and priorities are set. In some circumstances, we need to protect from the viewpoint that a politicized process leads cities to backing off point source actions.

The final point I want to make—and it is a sobering point—is that in Rhode Island right now, we have permit backlogs as long as your arm. There are big problems in States getting the work that they are required to do done now. Perhaps one of the strongest pieces in this legislation is the need to raise permit fees. I think if we are going to move ahead with the strategic initiatives like watershed planning, let's not forget that the water quality programs right now in our States are starved.

In Rhode Island we just took a 10 percent budget cut on the State level. The State has been raising fees all along. The need for the Federal Government to set a fee structure in place to protect water quality is critically important in our minds.

Thank you very much for the opportunity and Save the Bay really appreciates being here.

Senator GRAHAM. Thank you very much, Mr. Spalding.

Ms. Stickel?

STATEMENT OF LORNA STICKEL, REPRESENTING THE WESTERN GOVERNORS ASSOCIATION, DENVER, COLORADO

Ms. STICKEL. Good afternoon.

I am Lorna Stickel, Chair of Oregon's water resources commission and chief planner for the Portland Water Bureau, which is Oregon's largest municipal water supply system. I am also a member of the Western States Water Council and have been for 4 years. I have been asked today to testify on behalf of Governor Barbara Roberts, who is co-lead governor for water for the Western Governors Association. WGA and the Western States Council work together to provide strong leadership in developing regional solutions for water issues in the 18 western States, and I have been involved in many of those activities over the past 4 years.

To encourage the benefits of a watershed approach under the Clean Water Act, the Council and the WGA have position papers that encourage the Clean Water Act to first encourage but not mandate a watershed approach to water and natural resource management protection. It should allow flexibility to States and local entities to craft basin-specific goals and programs that are prioritized on the basis of risk to quality of life, human health, and ecological concerns.

It should emphasize performance and not planning. It should not interfere with the rights of States to allocate supplies. It should allow States to use existing authorities and programs to establish watershed entities to meet their needs as they understand them.

It should require EPA to provide technical, financial, and research assistance. It should provide Federal funding to support watershed management. And it should support integrated regulatory programs and consistency within the Federal programs themselves.

Title III, as proposed, addresses the principles listed very well. Therefore, I am here to speak in support of the proposed amendment.

The Oregon experience itself—Oregon has had a long history of water quality and quantity planning on a basin and sub-basin level. Many of these early plans were based on regulations rather than a broad view of actions. The State is implementing, as a result of a court decree, water quality plans in 15 water quality limited watersheds.

A reading of the Oregon documents that I have submitted will demonstrate to the committee that this State is well on its way to a voluntary program that matches the title III proposal. Some of our experience, briefly, include that our Legislature established a governors watershed enhancement board in 1987. Since then, nearly \$2 million has been awarded for 62 major projects with actual on-the-ground physical improvements.

Two, the Governor's forest planning team has been reviewing National Forest and Bureau of Land Management plans and emphasizing the watershed approach and the need to protect uplands to benefit water systems. After the Snake River Salmon species were listed under ESA, the Northwest Power Planning Council called upon Bonneville Power Administration to fund model watershed programs in each of the affected States. The Grande Ronde Basin in Oregon is one of those.

In 1990, following a legislative session that debated but did not resolve the issue of needing more locally based water resource planning, State agencies developed a pilot stream restoration program. We did that in the John Day Basin. It uses a watershed approach to stream restoration and has served as the basis for implementation since then with several successes.

In 1992, the State's strategic water management group, chaired by the Governor's office and composed of all the agency directors, formally developed a new watershed management strategy. The SWMG watershed management report is enclosed in the written testimony.

This process is being formally recognized by our Legislature at this very moment in this session. The law does not codify the process, but sets it up as a 4-year pilot program.

In a major effort to manage resources holistically, nine State natural resource agencies teamed together to prepare a funding proposal to restore watershed health and sustainable production in two critical basins of the State. It is likely to receive between \$7.5 million and \$10 million over the next 2 years.

In terms of some suggestions for this specific bill, we would point out some of the following:

First, the interagency committee needs to have a more specific charge directed to it because it is unclear at this point. They certainly could be used to help develop the guidance rules that are mentioned in that section.

Two, we would suggest some new language regarding the management entity, which should be designated as coordination entities rather than having specific responsibilities for funding and implementation. My written testimony provides some specific language changes.

Three, time frames need to reflect that protections for quality watersheds may be a high priority—this is the refuge system concept—and may require some flexibility in timing for problem areas. This reflects the issue that in many cases you don't just necessarily want to focus on the problem watersheds, but you have high quality watersheds in many parts of the west and you do not want them to get worse. You want them to maintain and continue the high qualities that they have. Watershed planning works equally well on that basis as well. We suggested some specific language for section 304 on nonpoint source pollution control.

Four, there may be a conflict between the requirement for Federal consistency on page 94(a) and the State water section (j) on page 97, which notes that Federal requirements under environmental laws are not meant to be affected. There would appear to be a conflict between those two sections.

Five, what is the relationship between the waters of national significance section requirements and this section on comprehensive watershed management? I would venture to guess that a majority of the waters in the western States would meet the definition of waters of national significance as you have defined it in this bill. Due to the deadlines in that section that States shall designate and that States shall implement plans within a 2-year period, the end result could be to make both sections mandatory, basically, and in a very short time frame with a very heavy load on resources that need to be brought to bear.

In conclusion, we haven't always done a good job—and we will admit that—in devising mechanisms that accommodate the diverse group of interests. This act deserves credit for trying to do so. It is important to maintain the flexibility that will promote solutions tailored to varying State issues, management structures, and laws. The answers lie within the specific targeted watersheds and developing them at the watershed level. It will provide the local buy-in that can achieve lasting results.

Addressing environmental issues on a watershed basis holds great promise because it fosters the most efficient use of public resources and participants.

Thank you.

Senator GRAHAM. Thank you very much, Ms. Stickel.

We will now turn to a period of questions. As I indicated earlier, one of the reasons for this particular format is to encourage discussion among the witnesses as well as with us.

We have heard some very persuasive testimonies on the benefits of watershed planning. To ask you to be the devil's advocate for a moment, what has caused the majority of States, as of today, to not adopt a watershed planning approach? What have been the constraints on their doing so? And what is your evaluation of the 208 program, which over 20 years ago was intended to encourage a more holistic approach to water planning? Why did it not achieve its result? What lessons can we learn?

Mr. Anderson?

Mr. ANDERSON. I would like to begin with 208 first?

I think there were two faults with 208. The first one was that it quickly lost relevancy because as the regional planning effort was moving forward, the major program that was being addressed at

the same time was the construction of wastewater treatment plants and those agencies in the government that were doing that were oftentimes not involved in the 208 process. So as the 208 plans were completed, they became, in essence, a report that went onto somebody's shelf and really didn't become relevant for the long-term direction of the region.

I think there really wasn't local buy-in, oftentimes, for that reason. For any kind of planning process to remain relevant and to the point, the commission has to be made up of all the major players, the people who can plan, people who can design, construct, operate, maintain, pay for, and regulate the plan. I think that is probably the main failure.

I think a lot of the States don't take up watershed planning for two reasons. One is because of limited resources and all the other mandates that they already have to deal with. The second thing is the uncertainty about whether or not there will be buy-in at the Federal level once the plan has been completed.

I have seen that up close in southern California. The Santa Ana River is a watershed that is east and slightly south of the Los Angeles area. There was a regional plan that was completed just within the last couple of years with site-specific objectives and objectives tailored to that particular river. Once it went up to the EPA regional office, it really fell on deaf ears. There wasn't the continued buy-in and participation at the Federal level. That is why it is very important to get everybody linked up at one table.

Senator GRAHAM. Any other comments?

Mr. Tedder?

Mr. TEDDER. I will just briefly touch on 208. I think it was covered very well by Mr. Anderson.

I think 208 came across as an overlay program. It did not really integrate with the other programs that were in existence at the time. Therefore, the States did not really get the support from the existing programs and the public that could have been there had it not been an overlay program. I think that was the downfall of 208 and the reason we have a lot of bookshelves lined today with those documents.

As far as the States not moving toward the watershed approach, I think it gets down to the ever-increasing demands and new initiatives that have been placed on the States both at not only the Federal level but at the State level. They have been tremendous. Simple things such as 5-year permits and the enormous backlogs the States are trying to overcome right now will never happen unless we look at that issue and create the time—I think that is the essence of it—the time to do the watershed and the plan and eliminate some of the multiple reporting.

Eliminate some of the widget counting for the sake of widget counting that the States are saddled with right now and I think they will turn those resources into watershed management plans.

Mr. SPALDING. I would like to comment on 208 just quickly.

I think it is important to remember what period of time we were in 20 years ago. As Charles Gauvin said, we had raw sewage flowing into Narragansett Bay with grease balls washing up on Senator Chafee's beach. So to some level, I think to the average person there was a touch of irrelevance about it. When you could see these

big industrial sources and these big sewage plants spewing raw waste into our bays and rivers, the idea of local setbacks and a myriad of small actions just didn't seem very important.

I guess I could testify from Save the Bay's standpoint that we focused primarily on point source sewage compliance for a number of years. To 208's credit, it did say clearly that we needed to upgrade our sewage plants in our basin. That literally has happened. So it shouldn't be considered a total failure, but clearly we didn't get very far down the list.

Senator GRAHAM. Any other comments?

Mr. GAUVIN. Just one point on 208 as well as to underscore what was really the unreality of 208.

I was the legislative point person for the 208 program in Rhode Island shortly after graduating from college and was plenty green behind the ears. I got out and tried to sell nonpoint source control legislation to a Legislature which had many leakage sewage treatment plants and other big problems, including toxic waste dumps. There was a real air of seriality to it. It just seemed to be the wrong environmental priority at the wrong time.

Something like that now, though, which is watershed-based, and which really seeks to integrate particularly the fish and wildlife habitat considerations I think hooks into problems that people are well aware of now and that will receive a fair hearing and a very, very enthusiastic reception in the States.

Senator GRAHAM. Ladies and gentlemen, I apologize, but we have a vote underway right now. We will take a short recess until we return from the vote, at which time Senator Chafee will ask the next round of questions.

Thank you very much.

[Recess.]

Senator GRAHAM. While we are waiting for Senator Chafee to return, I will start with my second round of questions.

I was very interested, Mr. Tedder, in your presentation of watershed planning in North Carolina and the description Mr. Spalding and others gave of the effort in particular States.

I would like to ask some more specific questions about just what watershed planning means. Let me ask a series of questions and then you can respond without feeling that you have to necessarily answer every question in order to get a passing grade. I would encourage as much specificity—for instance, Mr. Tedder, if you would like to select a particular watershed in North Carolina for purposes of illustrating how the process evolved—what was done to identify the help of the river and the causes for its lack of help if in fact it was determined to be impaired?

What was the range of options available to address the various forms of impairment? Which option was selected and why? What were the consequences of that choice? How are you monitoring those consequences?

How has all of the above differed from what might have happened had you not chosen to engage in watershed planning?

Mr. Tedder?

Mr. TEDDER. Let me give an example. I will use the Neuse River Basin, which happens to be one that has completed the process. The plan is in effect.

Senator GRAHAM. For those of us who are not from North Carolina, where is that geographically?

Mr. TEDDER. That basin covers much of the State from the Raleigh area in central North Carolina to the coast. It is approximately a 300-mile stretch of river and tributaries.

What was the background to identify the problems? This was an effort that began in the late 1970's with numerous problems within the river system. We started a very intensive monitoring program at that time to identify the major areas that needed to be addressed in the Neuse River Basin.

As we looked at the range of options at the time—and again back one second because I think it focuses on a previous speaker's comments—not only were we using chemical information, but we were using biological information very extensively. I think that is very important to successful monitoring programs, as well as looking at the land use and what goes on within the basin.

As we looked at the range of options that we had available, there were many. We chose to implement some earlier and some in the actual basin plan. One of our supplemental classifications in North Carolina is called nutrient sensitive waters. It is a special designation for waters and if so designated allows our commission and our agency to prescribe various nutrient controls to address that particular situation, which we did in the Neuse River Basin.

But it also allowed us to look at other areas. Our basin-wide approach is not a new regulatory program. We have looked at those areas in the basin. We were initiating efforts throughout our program—whether it be animal operations—we are an agricultural State and the coastal part of North Carolina—that was an area of concern. We again stressed the control, working with our nonpoint source agencies directing agricultural cost share funds to that part of the State for animal operations and agricultural problems. That was part of the solution.

We chose many options, and I think that is what you are going to find in any basin plan. There are going to be numerous options. We chose numerous options such as nutrient sensitive waters, NSW. We are concentrating on animal operations, not only with new rules we have just recently adopted but also the State right now has about \$8 million a year that we put in a cost-share program in trying to direct those resources toward the problem areas of the State.

The consequences of the choice and how we are monitoring the consequences—the best consequence was that we got tremendous support from the regulated public, from the public in general, from our Legislature using this approach for this basin and for the entire process of watershed management. The public really got behind the process. I think that was the best consequence out of the entire exercise we went through, plus I think we focussed direction to address the most significant problems and to focus on those problems in the Neuse and get more realistic results in a faster time frame than would have otherwise happened.

What would have been different? I think we would have had lack of public involvement in the overall decisions and understanding the basin and its problems and how we're going to direct those resources. We would have probably continued to waste resources—I

hate to say—because I am totally convinced that the watershed approach is much more efficient. We would not have had a plan.

We would have been addressing very specific situations in industry, municipality, or any particular discharge, maybe some component of the nonpoint source. But we would not have put a fully implementable plan on the ground for everyone to know what that plan is and where our focus would be for the next 5 years, not just a focus for tomorrow or the week after.

How do we follow-up? These plans are set up so that they have to be revisited every 5 years. One of the things we are implementing in each of the basins is a very dynamic monitoring program to ensure that we can fill in the gaps that we identify each time we go through the process and also to measure the success of those management actions in that basin.

Senator GRAHAM. Any other comments?

Ms. STICKEL. I would like to address that the scale of the watershed issues in many of the western States is really quite large with sparsely settled areas. One that I would call particular attention to is the John Day Basin in Oregon, which is a major tributary of the Columbia River and is one of the only rivers in the State that does still has a wild fish run of anadromous fish. It is not supplemented by hatchery fish. It also has almost no structural storage built on it.

It is a ranching, farming community. It has nine different counties in it, numerous small cities. What was done was that the State Legislature identified it to focus resources on, a large GIS effort—and I can't stress enough, I guess, that I think to some extent one of the biggest problems you face in looking at watershed level planning, particularly if you're going to be aggregating a lot of sub-basins or you are looking at one large basin, is that you can never really kind of get your hands around what the condition of that particular watershed is, particularly in some of the larger States where resources are limited to get that information.

That was a focusing of all the different agency resources, including Federal, State, and local. In that case, a local watershed council was formed, appointed by the county commissions from those various counties. They started to work. They spent about 2 years taking a look at what the issues were, what the problems were with the river. Causes of impairment, particularly in this river system, seemed to be oriented to diversion structures and high amounts of agricultural water diversions during summer low flow periods, large winter flows relatively now because of upland management issues, scour down and leave the watershed relatively quickly.

The range of options that were available to improve some of those situations were both structural and nonstructural. Many times local folks in the west will simply say, "Well, we get the water in the wrong time of year, so let's just store it in the winter and release it in the summer and then we can correct a lot of the problems that we have." In some instances, that actually does seem to be the case because we have modified the natural system to such an extent that it doesn't have the water retaining capabilities that it originally had.

In addition to that upland management was a key issue. There are large amounts of National Forest lands. There has been a tremendous amount of cutting. There has been quite a bit of change to climatic species of vegetation. As a result, you have infestations that come along and then fires, which cause any number of problems.

The options that were chosen were basically non-structural and structural in nature.

Senator GRAHAM. I am sorry, but Senator Chafee is going to have to go to another meeting. Actually, I am impinging on his time. So when it gets to be my time again, I am going to return to you and you can complete that analysis.

Senator CHAFEE. Thank you, Mr. Chairman.

First of all, watershed planning is very expensive. We, in Rhode Island, have spent on Narragansett Bay alone something on the order of \$6 million. We got that money not from one of these bills that we're talking about. We got it from the estuary legislation. So obviously, the situation Ms. Stickel was talking about and Mr. Tedder—they wouldn't qualify under the estuary bill. It is difficult to get the money.

Do all of you agree that it is expensive?

Mr. SPALDING. There is a need to collect data, which makes it expensive, and a need to run a good process. That makes it at times expensive. I think Mr. Tedder talked about other expenses, but definitely you need to put the resources to it.

Senator CHAFEE. The other point is that it seems to me in watershed planning, your point sources aren't a major problem because you have the tools to deal with those. Am I correct that the real problem is with your nonpoint sources such as farmers and woodsmen?

Mr. GAUVIN. Yes, I would say that.

Senator CHAFEE. You have the tools to deal with the point source pollution. You don't need a watershed plan and you don't need persuasiveness to deal with point sources.

Mr. ANDERSON. Well, with one exception. The question is, How far should point sources continue down the road in additional facilities? There is still a large amount of resources that need to be spent for point sources. EPA identified resource needs in the vicinity of \$80 billion. AMSA itself has looked at resource needs for O&M for construction of about \$12 billion annually.

Senator CHAFEE. Mr. Tedder mentioned watershed planning and involvement. We've had some excellent testimony about the New York city watershed area the other day and about getting the farmers involved. It is very good what they have done.

But could you briefly tell me how you get these people involved? How do you get some lumbering group involved?

Mr. GAUVIN. We have had lots of contact with ranchers and wood lot operators and the like through restoration projects that we have sometimes done on private reaches of stream. We have gotten them involved that way. Often when you do a habitat restoration project you can politely suggest—and sometimes be very successful in suggesting—that the way the property is managed might be revised. A number of the people we have worked with have been very responsive.

Senator CHAFEE. Mr. Spalding?

Mr. SPALDING. You can meet when they are able to meet. One of our problems in the Narragansett Bay project was that we would meet during the day when the State officials were available and other professionals in the business were available and they were on the bay. They pointed it out time and time again and we just couldn't move on that. Clearly we have to set these things up so that the average person can get there.

Senator CHAFEE. Mr. Tedder?

Mr. TEDDER. In 15 seconds or less, basically we went through the public hearing process, we would also explain the plan in the media. We spread the word that if we did not get it from a voluntary approach, we would get it from a regulatory approach. That gets everybody out.

Senator CHAFEE. But I don't know how you got a regulatory approach on a nonpoint source pollution problem.

Mr. TEDDER. We very much have a regulatory approach with our turbidity standard in the State of North Carolina and how it is implemented and tied into best management practices. In our forestry statutes, BMPs are required. There are quite a few regulatory approaches that are available.

Mr. GAUVIN. A number of other States have taken that approach as well.

Senator CHAFEE. Thank you, Mr. Chairman.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Mr. Tedder, I am well aware of what we have done, but maybe for the edification of all of us, why did North Carolina decide to undertake the watershed approach on a State-wide basis?

Mr. TEDDER. To try to sum it up—

Senator FAIRCLOTH. And when did we do it? What year? Was it 1979?

Mr. TEDDER. We began some of our first efforts with the planning initiative—and again, we restructured the water quality program. We put together a format, a brief structure and a thought process whether it is the enforcement, the compliance, the nonpoint source—it all starts to focus into individual basins. It was in late 1970's or early 1980's.

We officially started the process this past year as far as the basins. Also, we had to get all permits in sequence. That takes at least 5 years under the existing Clean Water Act.

Efficiency was the major reason. We must maximize the resources we do have. The effectiveness of the plans we put together, the effectiveness of our actions was another reason. We needed to roll the nonpoint source issues into a plan. We needed to look at what the issues are and not approach everything on a State-wide basis, but tailor it for the needs of specific watersheds.

We also had to look at the backlog. It was mentioned before that States have a backlog with permit situations, which affects new industry. It affects develop when you cannot get the permits issued in a timely fashion, not to mention the reissuance of expired permits. This I think will allow us a long-range mechanism to control that situation, at least in North Carolina.

We have several mechanisms and several rationales to proceed with a watershed approach.

Senator FAIRCLOTH. I have a number of questions, but we are going to have to go vote, so I will ask this: Have you put a dollar figure on how much it cost us to put this watershed project in and to keep it in? What does it cost us a year in North Carolina?

Mr. TEDDER. That is a tough question. Some of my counterparts would probably shoot me for this answer, but basically we have always approached it in North Carolina that it did not cost anything to change a management style. We did not get an increase in appropriations. We surely did not get an increase in our grants for the process.

We changed the way we do business and the way we think of these things in North Carolina. I think we could do that because we addressed the entire State, therefore you can use entire programs to change the philosophy.

So I have always said that it did not cost us anything. Could we do a lot better job? Could we do better basin plans with additional resources? The answer is yes. But at the same time, I think if we look at some of the barriers, that would be incentives as well as financial incentives because the last thing I want to do is to rob from various pots of the Clean Water Act for watershed implementation.

Senator FAIRCLOTH. Do you think the clean water bill we're discussing will speed up the watershed planning process in North Carolina, or being as far ahead as we are, will it tend to slow it down?

Mr. TEDDER. As written, I think it would probably slow the process. Again, I say that because of designations of certain watersheds. Again, looking at the language of the governor—Administrator approval—what I see there are Federal bureaucratic hoops that we would have to go through that we have already gone through. Would it be worth it to us? The answer would be no.

Senator FAIRCLOTH. Thank you, Mr. Tedder.

Senator GRAHAM. You can take another 2 minutes, if you would like, Senator Faircloth.

Senator FAIRCLOTH. Since this is a big issue nationwide—we saw it the other day from New York—you have worked with it over a period of 17 years probably one of the greatest concentrations of livestock in the Nation and maybe the world in an immediate area of North Carolina.

What problems have you had? What has been done to solve them? What is the position we are in today with this vast concentration of livestock?

Mr. TEDDER. It has been a major issue in our State. Actually, in February of this year our commission adopted some fairly comprehensive animal management rules. The intent is to have a form of control over every large animal livestock operation in the State. The turbidity standards, which were adopted some time ago, tie in to the entire agricultural arena as well as the animal operations.

We now are getting a lot of support from the various agriculture agencies within the State because we think we have put forth a plan and a mechanism for control with the animal operations that is realistic, does not drop the heavy hammer all at once, and gives

them a chance to make it work. We are hoping that will be a very large success for what we consider to be one of the major issues in the State right now.

Senator FAIRCLOTH. I thank you.

Senator GRAHAM. Thank you, Senator.

We will recess again for purposes of this roll call vote and will reconvene as soon as possible.

[Recess.]

Senator GRAHAM. We will reconvene.

Ms. Stickel, about an hour ago, you were in the midst of responding to the question relative to the practical implementation of watershed planning. I apologize for the long interruption, but if you would like to conclude your response to that question, you may do so.

Ms. STICKEL. I guess what I decided to do in the meantime—particularly since I start getting nervous when my plane is getting close to leaving—I am going to go ahead and submit some information from Oregon about watersheds related to answering these specific questions. I will send that to you.

But I would say in general—Mr. Gauvin raised the issue that quantity and quality issues really are wrapped together. I think we in the western States totally recognize that. Much as we in the past probably have been perceived as saying, “Hands off that concept. We don’t want anyone thinking about the quantity relationships,” clearly they are there. We recognize them.

I think the days are different today than they were back when 208 planning was beginning, which was much more focused on the quality issues and the agencies that are responsible for quality issues. I think today, with the amount of political jurisdictions that are out there mucking around in water issues, the amount of regulatory things that are put down on people—growth pressures which exist in many parts of the urban west, in particular—that people are beginning to realize that they are having trouble getting to do what they want to do.

They are seeing handwriting on the wall that says that if they don’t start dealing with some of these issues in a more holistic fashion, a couple of things are going to happen, both of which relate to dollars. One is that they are going to go to court. There is no bigger money suck than going to court. I am sure most of you in this room are probably aware of that.

There is a lot of money that is going to have to be spent to fix problems that have been coming up on us for a number of decades and to be able to continue, then, to make uses of water in the most efficient way possible.

To this question about what leads people to use these kinds of approaches—I think if you look at Portland’s problems with CSOs that are going to cost somewhere between \$750 million and \$1 billion to solve under the most recent estimates, if you look at meeting regional water supply needs in the whole Portland metropolitan area, we are looking at least \$500 million. You say to yourself, “What is the most efficient way to spend those dollars?”

It isn’t sitting around in court. And it isn’t writing tons of environmental impact statements. It is taking a look up front. It is looking at all the stakeholder issues that are out there and saying,

"Can we come to the table and meet needs in a much more win-win environment than we have had in the past?"

I know that is a cliché and I know that from an environmental perspective—myself being one of them—I often look at the slice of the pie that is left and say, "What do you mean balance? We are not talking balance here, we are talking about restoring imbalances."

I think that a lot of people recognize that quality of life issues are getting elevated in people's minds. I know the economy is a major issue for a lot of people in the west, but economy now is wrapped up not only with resource extractive issues, but also with other issues related to just why you went there in the first place and what you're trying to do with your life.

I think many of us see that this isn't just an exercise anymore. This is where it is at. This is what is going to get us from A to B, out of decisionmaking gridlock, out of being in court, out of being put down heavy regulatory programs—these issues are our issues. They are not congressional issues solely. They are State issues and they are local issues.

They are there. The more you can deal with them on the direct basis level of the problem shed that you're trying to deal with, people are coming to the table. And they are not having to be dragged kicking and screaming. So I really do think times are changing.

We have needed this time period beginning with the environmental era and moving on its way through the 1980's and now into an era of restricted resources. I think this kind of a technique offers the best way to win your way through this process.

That is my soapbox.

Senator GRAHAM. I would like to frame three or four issues and would request as direct a response—including yes or no being satisfactory.

This bill takes the approach of voluntary watershed planning with incentives and inducements to do so. There has been some suggestion—I think Mr. Gauvin stated that making it voluntary is almost to ensure its failure.

Briefly, what is your opinion? Should Congress go beyond the language that is in the bill and make this a mandatory program that all States would have to adopt?

Mr. Anderson?

Mr. ANDERSON. Yes. AMSA's position is that it should be mandatory. I think you just heard a terrific argument for that position. Once you have everyone at the table—and as painful and as argumentative as it sometimes is, particularly in the early going—it is the only way to develop consensus and to target the real priorities within a watershed and to be as efficient as you can at addressing the problems.

Senator GRAHAM. Mr. Gauvin?

Mr. GAUVIN. Senator, I would agree. The important qualification—the biggest problem in the watersheds we are going to be dealing with is nonpoint sources. If you tighten up the provisions in the bill on nonpoint sources and address a number of these issues in the regulatory context, you probably don't need to make

the planning part strictly mandatory because, frankly, the problems are so difficult and so important that people will plan.

Senator GRAHAM. Mr. Spalding?

Mr. SPALDING. I guess I would agree with Mr. Gauvin.

Basically, we share a concern that if you take this approach as it is defined, you will in some cases perhaps take the pressure off point sources. It has been discussed why AMSA likes the process. They see opportunities not to have to do some things with their sewage plants.

Senator Chafee did point out that there is a certain enforceability around that program that has worked pretty well now for 20 years. Nonpoint sources are much harder to get a handle on.

I worry that if we make it mandatory we will somehow open up doors that we don't want to. On the other hand, it is a very good approach and needs to be taken very seriously in all watersheds.

Senator GRAHAM. Is your answer that you think we ought to make this mandatory?

Mr. SPALDING. I think with the qualification that he had, that we tighten up the nonpoint side a good deal.

Right now, I think you should do it where you have to do it. Where your standard program isn't working, you should mandate this kind of approach. North Carolina has taken it as a management approach for the whole State and they are very persuasive. But different States have different ideas on how to do things.

But I think where you have a non-attainment area it certainly should be mandatory.

Senator GRAHAM. Mr. Tedder?

Mr. TEDDER. I hate to disagree with all the speakers, but I think it should definitely be voluntary at this point. I think we have a lot of momentum from the States around the country for the watershed approach. Again, it is one thing to say voluntary versus mandatory, but then you have to read on through the bill and listen to others talk about all the other hooks that are going to catch you if you want this to be mandatory. Then you have a one-size-fits-all approach to watershed management and I think it will doom the process almost from a guaranteed standpoint.

Senator GRAHAM. Ladies and gentlemen, I am afraid that we have another vote. Let's take 5 or 6 more minutes.

Ms. Stickel?

Ms. STICKEL. I would agree with Mr. Tedder in terms of—I would say a qualified no. That was real good about taking my arguments and flipping them around to the other side. I agree that you could read it both ways. But I think my arguments were to say that it is happening anyway. I suppose you could say, "Well, since it is happening anyway, why not make it happen?" I guess I tend to feel that it isn't just an issue. Watershed planning is not just water quality oriented.

That is the point I was trying to make, particularly in western issues, that they are quantity related. They are supply related, meeting changing demands, and actually continuing to meet the demands you already have. So I think that if you want this program to work, you give it the right incentives and it will be used. And if it is not—and I think States are really willing to put this on the line. I think States are saying, "We are willing to step to the

table. Hold our feet to the fire. Test us. Monitor us. Make us come back and tell you whether this thing is working or not. If it is not, fine. Then we understand."

But I think we want a chance and an opportunity to show that this can work without it being a top-down requirement for it to do so unless we choose it to get the incentives you have built in. And there are some substantial incentives here, as I see it.

Senator GRAHAM. I am going to ask a couple more questions and then I will have to leave. I am going to ask the staff director, William Leary, to ask the balance of the questions which we have so that we can complete the record without undue further delay.

One of the reasons that was given for the 208 program's lack of success was that it did not properly tie planning to implementation. If you want to editorially disagree with that assessment, you are at liberty to do so, but if you do agree with it, it seems to me that there are several implementation issues which we need to be thinking of.

This is not a complete list, but some of those would include the questions of cross-State boundary issues. Should we set up a process that would recognize that there are going to be multi-State watersheds and lay out how those are to be dealt with?

Also the questions of non-structural response exist. I will state a bias. Florida has had many years of experience with what we call our Save our Rivers program, which has as its goal acquiring the flood plains around our major rivers as the principal line of defense against nonpoint pollution. Should there be a non-structural implementation strategy in here, such as a Federal/State partnership for land acquisition? Or what else would you recommend? And are there other implications for implementation of adopting either a permissive or a mandatory watershed planning process?

In 5 minutes or less, let's talk about those issues.

Mr. SPALDING. I think your non-structural approach is a valid one and a good way to go because ultimately structures tend to create as many problems as they solve. You are concentrating pollutants. Then you typically have to slow them down and let the pollutants sink out or treat them. If you can acquire areas, that is a much better way to go.

In Rhode Islands, most of our rivers we built right up to, so we are going to have to come up with something else, like plow into pavement and create some wetlands. But I think that is a good approach.

Senator GRAHAM. Any other comments on the implementation implications of watershed planning?

Mr. GAUVIN. In the nonpoint context, I would downplay the significance of the multi-State or interstate problems and look much more closely at the conflicting jurisdictions, particularly in the west, where you have Federal land and non-Federal land and look at how you can develop standards that really look at watersheds and seek to fix habitat no matter what part of the river reach it happens to be located in.

One of the things that is unique about the Clean Water Act and one of the things that we need to bear in mind when we look at nonpoint controls and how they apply is that the Clean Water Act is the only vehicle of general jurisdiction to deal with the checker-

board in the west. It is in many respects the only firebreak between the problems we have today and the Endangered Species Act.

Ms. STICKEL. I would add that if there were a tie between States dealing with interstate issues and Federal programs, including consistency of Federal actions, funding, and flexibility with regulatory programs, I think you would find a much greater use of the interstate issue.

I know in the northwest, timber issues—but in particular, endangered Salmon issues—have forced States to come to the table whereas before they had very little incentive to do so. They certainly see a lot of incentive to do that today.

I think that if there is one thing that would be beneficial, it is for the Federal Government to set the parameters for what the Federal interest is, and then get States to step up to the table to work out how those issues are to be resolved.

Mr. TEDDER. I would agree to downplay the cross-State boundaries issue because I am not sure that is really an issue here with the watershed. I do not really care if my neighbors disagree with our approach or if I disagree with theirs. If we are looking at a watershed approach on a voluntary basis to improve the programs in selected areas where you need the effort, let those move forward. Once you start trying to mandate or set in motion something with the act that will settle cross-State boundaries—again, I keep emphasizing—what you have done is made a one-size-fits-all approach.

I do not think that will do anything to push this management concept forward by pushing that approach.

Mr. ANDERSON. I would like to address the issue of one-size-fits-all. I think some of the interstate issues are an excellent argument for a mandatory program. Look to the Great Lakes, the Mississippi, the Gulf Coast, the Columbia River, the Chesapeake—it could go on and on about major water systems that require interstate cooperation, which also implies that you are going to have to have some State evenness in how public policy is applied.

It does imply a tremendous amount of cooperation that I think can only go forward when everyone is at the table. There are many special interests who have a stake in the status quo. If they are not at the table and they are not dealing with issues, then the problems they are generating to be solved are not going to be evenly addressed.

I really think it is essential for the process to move forward and that it has to be mandatory. But once you have said that, the approaches that are taken by the individual commissions—the size of the table—there is some flexibility that can be applied to that. But you have to get everybody to the table.

Senator GRAHAM. Ladies and gentlemen, I apologize, but I am going to have to leave again. But rather than recess, I am going to ask Mr. Leary if he would take the Chair for purposes of asking the remaining questions we had identified for panel one. When we return, we will move to panel two on enforcement.

Mr. LEARY [assuming Chair]. I want to follow-up on the question of interstate issues and address more specifically intrastate jurisdictional problems.

Insofar as the bill authorizes the Governor to create a management entity—it could be the State, local, or regional—in Florida we have water management districts that already exist that pretty much follow watershed boundaries, but a lot of States don't have a regional structure set up.

In your State where you have gone to watershed planning, how do you deal with the jurisdictional disputes that would invariably occur when a watershed doesn't adhere to those boundaries?

Mr. Tedder?

Mr. TEDDER. I am not sure we really have one that does not adhere. My problem with the designation of a management entity within North Carolina for water issues—those are so delegated from the Governor already to the agency. That would allow, based on a watershed, is numerous management entities which may lose the consistency of the planning process, lose some of the expertise involved in basin-wide and watershed approaches, and in some cases—probably not in North Carolina but it could happen in other situations—the wrong entity being designated to address the problem. I know that is a fear in many States right now.

I think that might be a bit of a time bomb sitting there, for that flexibility to be in the act.

Ms. STICKEL. I guess one of the things that I would point out is kind of a cliché, but it is that form follows function. I think if you want to dictate form first without thinking about function first, you may well wind up with new layers that you hadn't thought through in terms of what their objectives are. I think one of the things that we're looking at is in the use of integrated resource planning, for instance, to help solve very difficult, complex, inter-jurisdictional water problems.

One of the things you have to do is an institutional analysis to begin with and factor that into the kinds of alternative answers that you wind up coming up with. So then you wind up creating institutions that answer questions, that get at objectives, that deal with actual implementable programmatic things that you want to do. You don't start the other way around and then make the process work to sort of fit it into a square hole.

I would echo Mr. Tedder's comments. We have some concerns over the use of that management entity and would suggest that you make that a bit more flexible and broad so that you can have coordinating entities. So long as you are accomplishing objectives by using the multiple agencies that are already out there who have authority and responsibility and funding to solve problems—which works all the way from a landowner all the way up to a Federal program that is passing through Federal dollars—you should do that. But don't do it in a shackled kind of a way that says that you must do it this way.

Mr. LEARY. Mr. Anderson, your proposal is the creation of a commission?

Mr. ANDERSON. Right, a commission that would, among other things, recognize existing entities and existing programs. For those that are already on the ground and operating, you would attempt to add to the governing board to include some of the spectrum of interests I mentioned earlier.

From a local perspective, in those areas where active watershed planning is not now occurring, we see an incredible amount of gridlock. In my watershed, the Santa Ana River, which is about 1,700 square miles, there are three county governments, three State agencies, four Federal agencies, 35 wastewater treatment plants, 50 cities, 2,000 miscellaneous direct discharges, and then all the other miscellaneous interests of agriculture, urban, mining, gravel operations—all of those in a very uncoordinated fashion.

So the Santa Ana River is not being managed. There are these puddles of programs here and there that address wastewater treatment plants, stormwater, but it is not all unified in one clear program for managing that river.

That is probably the situation in most parts of the country. I think North Carolina should be complimented for how progressively they have moved on this plan. AMSA is saying that we should not throw out the North Carolina approach or what is going on in Oregon, but to use those as examples of moving forward on a national scale.

Mr. LEARY. Let me move on to the issue of designating impaired waters because the bill does mandate that States designate impaired waters.

The legislation, however, does not give States a great deal of guidance in that. Is there reason to be concerned that the variations from State to State in the designation of watersheds requires greater guidance? Or do the States need the flexibility that the bill seems to provide?

Mr. ANDERSON. I think if everything is a priority, then nothing is a priority. So it is important that whatever criteria are used in establishing what you're going to do first, you take into account those major issues of importance.

We believe that you must set priorities. Using an impaired waters designation or some other designation is rationally based is certainly the way to go.

Mr. TEDDER. Just as a comment, I don't think there is anything wrong with looking at impaired waters. I am not sure that we need expansive criteria. I think the States have done a fairly good job. What we do not need is a third list or a fourth list of impaired waters. When you look at 303(d) and 303(e) and 305(b), pretty soon we are going to run out of waters to put on the list.

I think we need to be careful with redundancy in the act if we are going to come up with another impaired waters list.

Mr. SPALDING. I think it is usually pretty clear what is impaired, at least in our situation in Rhode Island, because we do have some seriously impaired water. But we do have inconsistencies between the two States that are the Narragansett Bay Watershed. It would be good to clear that up. But I think that can be done on a regulatory level. I think if EPA was working harder toward making water quality standards consistent and adding some of the good standards they are using in North Carolina and moving those ideas around we wouldn't have the problem that we have now.

Mr. LEARY. Looking at the time line in the bill, the bill provides that States would designate impaired waters within 2 years and then there be two 5-year rounds, so to speak. In the first round, within watersheds, the State could use site-specific plans or nation-

al best management practices. However, in the second round, the site-specific plans would only apply in watersheds where there has been an approved watershed plan. This is seen as an offensive to the States to engage in watershed planning.

In the hope and expectation that over that period of time these watersheds would attain water quality standards, then the national best management practices would not apply. On the other hand, if they failed to, some farmers in these areas would lose site-specific plans and be subject to national BMPs and are concerned about this.

Do you agree with the concern they are raising? Do you believe that States will be able to attain water quality standards in that time?

Mr. ANDERSON. It is tough to ask anybody to be accountable for somebody else's actions or inactions.

Mr. GAUVIN. I think one of the other problems is that we have very little information on the effectiveness of many BMPs, even though we have been using them for years. As we acquire additional information, and as we start looking very closely at these watersheds, we are going to discover that the BMPs—by accident or design—have been quite effective in some places and not effective in others. It is going to seem very irrational to someone who is phased-in control suddenly to find that the thing doesn't work and that you are losing that turtle species or frog species or fish species and you have a big problem on your hands. Suddenly you have to then go to a radical rationing down.

I think a much better objective is to look at changing the threshold for determining what impairment is. Right now, current water quality standards are way off the mark for most nonpoint source pollutants in a number of cases. What you need to do is empower the States and authorize the States—direct them to redefine the standard for determining impairment and to adopt water quality standards that specifically address the pollutants of concern in the dynamics of nonpoint source pollution.

Mr. LEARY. Then getting back to an earlier question I had, do you think the legislation needs to give States greater guidance in the designation of impaired waters?

Mr. GAUVIN. Yes.

Mr. LEARY. Mr. Spalding?

Mr. SPALDING. Could you repeat the question? I am a little lost here.

Mr. LEARY. I would go back to my original question, which regarded national BMPs versus site-specific plans and whether you agreed with the concern of farmers that this was a penalty upon them if the State fails to get an approved watershed plan.

Mr. SPALDING. I guess I am somewhat skeptical about any of these time lines, if that is what you're leaning toward.

The record is that these clean water time lines are not real time lines in the long-run. We go by them and set new ones, and we go by them and set new ones.

There are a lot of reasons for that. A lot of is what Charles just talked about, that there are a lot of unknowns out there. Achieving water quality standards within 10 years—you think it is doable from here and we are all talking about it, but there are a lot of

unknowns about how to really control a lot of this nonpoint pollution, especially in heavily urbanized estuaries like Narragansett Bay.

You talk to a city planner and ask him what he is going to do about stormwater runoff in Cranston down at the lower end of the Patuxent River and he says, "There is nothing we can do. It is all built out. It all goes into the river. Where do I send the stuff? What do I do with it? How do I treat it?" It is a huge load because there is a bunch of paved area.

This will ultimately end up being the best-we-can-do type of approach and we all have to push hard for that. But we shouldn't back away from trying to achieve those goals, because that is the incentive. We can't lose that enforceability. It is a tough thing. I don't know how else to put it, but I am jaded by the real world experiences of trying to achieve water quality standards in heavily polluted northeast rivers.

Mr. LEARY. Any other comments?

Mr. TEDDER. When you mentioned meeting water quality standards, I would have a concern—whether an individual farmer or anyone else—when I am not sure what those standards are. Now we are talking new water quality standards that may be promulgated for sediment standards, biological standards—I am not sure what set of standards we are talking about having to be met in 10 years. I am not sure anyone does.

Mr. LEARY. I have just one more question. We will probably be submitting additional questions for you.

Just to get back to a question that Senator Graham touched on, in the State of Florida, there are a number of State programs that are designed to acquire land. One of the mechanisms that has been used to protect river basins has been public ownership.

The legislation puts a registration on the amount of 319 money that can be used for land acquisition. I am curious what your view is of land acquisition generally as a tool in watershed planning, and second how much flexibility the States should have to use that tool. Or is there concern that they could dry up all the money just for that one purpose?

Mr. TEDDER. I think there is a concern as far as impacting the programs. I think as you read through the bill, you can see that it is reaching in and robbing different parts of the program right now for watersheds.

The concept itself of public ownership for protection—there is nothing wrong with that. How you pay for it and what suffers to pay for it I think is of concern.

Mr. SPALDING. Our experience is that there is a tremendous amount of work being done on land acquisition. There are other sources of Federal money. There are foundations and organizations devoted to it. The problem is in deciding what land to acquire, strategically, and where it is important. There isn't a lot of work spent on that. I would argue that the 319 money should be there helping us make those strategic decisions and recommendations, and then local resources and other Federal resources can be brought to bear to actually acquire that land. There are other sources out there.

Mr. GAUVIN. I don't think the States ought to be allowed to spend it all in one place or in one basin, but I think we shouldn't

deny States the flexibility to be able to demonstrate that they can acquire, at least through conservation easements or other restrictions, the kind of control over the flood plains, the wetlands, the perennial and ephemeral tributary streams that really go into the watershed that affect the water quality of that watershed.

If a State can demonstrate that and can do it, and wants to proceed in that way, I don't think there should be a restriction. I do agree, though, with Mr. Spalding's statement that there is a tremendous amount that needs to be done on the basic knowledge and information, particularly on the strategic side, to come together. Unfortunately, I think States have largely squandered that kind of money in the past. I guess it would be refreshing to me if you can have a State regulator come in and show you on a big map that he or she can control the nonpoint source problems in a basin through land acquisition or development rights acquisition—all power to them. Let's do it.

Mr. ANDERSON. I would like to also add that I think if we take a lesson from the page of the 1972 Clean Water Act that much of the early advances that we had in water quality, which was related to point sources, had a lot to do with the Federal Clean Water funds that fueled those programs. I think S. 1114 goes a long way toward identifying many other programmatic areas that need attention today, and those Federal funds will help jump start those kind of approaches.

I think we have to become far more unconventional in how we address water quality problems in the future. There was the mention of what was going on in Rhode Island with grease balls on the beach and those kind of issues, but we are not to those kind of gross levels today. So as we fine-tune water quality, as we go after habitat restoration and other programs like that, we have to have a wide spectrum of opportunity to address the problems that are going to be very site-specific to each watershed.

Senator GRAHAM [resuming Chair]. Ladies and gentlemen, I apologize that we are going to have to call panel one to a close. There may be some additional questions which we would submit and would appreciate your response in writing.

We appreciate your participation, intelligence, and indulgence.

I would ask panel two to please come forward.

The second panel, which will focus on the question of enforcement, consists of: Mr. Ed Lloyd of the Rutgers Environmental Law Clinic, who is representing USPIRG; Mr. Steve Herman, Assistant Administrator for Enforcement, United States Environmental Protection Agency; Ms. Marlen Dooley, director of enforcement coordination, commissioner of New Jersey Department of Environmental Protection; and Mr. Roger Marzulla, who is a partner in Akin, Gump, Strauss, Hauer & Feld in Washington, D.C.

We appreciate all of your participation and I thank you for your patience in the time that it entailed in completing the first panel's testimony and questions.

We are joined by the distinguished Senator from New Jersey, Senator Lautenberg, a senior member of this committee and subcommittee.

Senator Lautenberg, if you have an opening statement or any questions or comments you would like to make, we would be pleased to receive them.

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S.
SENATOR FROM THE STATE OF NEW JERSEY**

Senator LAUTENBERG. I appreciate that, Mr. Chairman. I commend you for holding this hearing, as you have on several other occasions, to deal with the Clean Water Act and the subject, though complicated, is important. I also commend you for the interest in getting this legislation to a point where it can be considered and perhaps we can get it reauthorized.

This is an issue that I have followed for several years. More than 20 years have passed since the Clean Water Act was enacted. Its intent was to end the horrifying degradation of our Nation's lakes, streams, and oceans. While water quality has improved since the act, our waters are still not clean, as you and I, Mr. Chairman, know from the coastal character of the States that we represent.

One of the reasons is that the Clean Water Act is not being adequately enforced. The GAO has issued a number of reports finding that the EPA and State enforcement efforts were weak and sporadic. EPA data for fiscal year 1992 indicate that 21 percent, almost 1,500 of the Nation's major industrial, municipal, and Federal facilities were in significant noncompliance with the act at some point during the year, and that 40 percent reported some type of violation.

These are only the worst violators of the largest facilities. The EPA Inspector General has said that the number of facilities reported as being in significant noncompliance is vastly understated compared to the number of permitted facilities. Further, the IG found that in 46 of 69 audits conducted in 1991, penalty assessments were insufficient to recover the economic benefit gained by the violator as a result of noncompliance.

This type of policy promotes, as you would imagine, a pays-to-pollute mentality. An effective enforcement program must provide that those who violate the act cannot benefit. As a general principle, penalties have to recover any economic benefit gained by the violator for noncompliance. These statistics underscore the point that a law is only as good as its implementation. The role of effective enforcement in achieving the goals of the act cannot be overstated. Not only does effective enforcement deter violations, it also helps to ensure that appropriate corrective actions are taken in a timely manner when violations do occur.

Coming from the most densely populated and highly industrialized State in the country, New Jersey has taken a lead in Clean Water Act enforcement. Through State legislation enacted in 1990, the State has sent a clear message to polluters that the mandates of the Clean Water Act must be taken seriously.

I am pleased to have with us Ms. Dooley, the enforcement chief of New Jersey's Department of Environmental Protection, here to discuss New Jersey's experience since enacting its tough Clean Water Act enforcement law. I am proud that my home State is

here to share with us some of the lessons it has learned through its implementation of this law.

I hope, Mr. Chairman, the committee will carefully examine New Jersey's act and take from it some of the experiences and some of the details that have been developed over the years. I think it will help us as we review plans for the reenactment of the Clean Water Act to use the experience factor as an indicator of what can be done, and further, what should be built upon.

I thank you, Mr. Chairman. I welcome the witnesses and I am glad to be here with you.

Senator GRAHAM. Thank you very much, Senator.

Normally, we would call on the witnesses in the order that they were listed in the agenda, but as the Senator has spoken about the program in New Jersey, Ms. Dooley, if you would be willing I would like to call upon you first for an introductory statement.

As we asked of the first panel, we would appreciate an emphasis on succinctness. Your full statement will be printed in the record, and we will turn to questions and I hope the same type of dialog that we had with the first panel.

Ms. Dooley?

STATEMENT OF MARLEN DOOLEY, ASSISTANT COMMISSIONER FOR ENFORCEMENT, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

Ms. DOOLEY. Thank you, Mr. Chairman.

My name is Marlen Dooley and I am the assistant commissioner for enforcement at the New Jersey Department of Environmental Protection and Energy. Thank you for this opportunity to participate in this hearing and present a State's perspective on enforcement of the Clean Water Act.

In 1990, the New Jersey State Legislature unanimously approved and Governor Florio signed into law the New Jersey Clean Water Enforcement Act. The Clean Water Enforcement Act has strengthened enforcement of the State's water pollution control and prevention program by substantially amending the Water Pollution Control Act to require that permits be taken seriously and to ensure that enforcement actions are adequate to effectively deter potential violators.

The Clean Water Enforcement Act was designed to enhance the Department's enforcement scheme in a number of ways. The act attempts to identify the most egregious violators by establishing two special classes of offenders: those responsible for serious violations and those committing a series of violations to be known as significant non-compliant.

To ensure that appropriate enforcement action is taken for serious offenses, the act requires the assessment of mandatory minimum penalties, \$1,000 for each serious violation. These penalties may not be waived or compromised. Permittees determined to be in significant noncompliance are subject to minimum penalties in the amount of \$5,000.

The act also limits the Department's discretion to compromise penalties beyond 50 percent of the assessed amount. In addition, the act requires the imposition of minimum penalties of \$100 per

day per pollutant for each item omitted on a discharge monitoring report. Further, as a means of bolstering compliance monitoring, the act requires that all major facilities be inspected by the Department at least annually, including the sampling and analysis of the discharge.

We think we have seen compliance in New Jersey that we believe we would not have seen without these measures.

In addition, the Department adopted a uniform penalty policy in accordance with the act establishing exclusive criteria applied to determine the amount of civil administrative penalty assessment. The adoption of this policy ensures consistency in our penalty assessment among similar violations accompanied by similar circumstances.

This no-nonsense enforcement approach appears to have sent a clear message to the regulated community that penalty assessments are fair, not arbitrary, reflecting all relevant factual and legal considerations known to the Department, and therefore are litigation worthy. The greater certainty now associated with penalty assessment is to better facilitate settlement negotiations as well as successful litigation when penalties are contested.

The Department firmly believes that compliance is enhanced by establishing precisely defined requirements and clearly articulating the way in which compliance is measured by the Department. We are here today to offer our experience implementing the New Jersey act.

In conclusion, our enforcement philosophy is fair but firm with compliance as the primary goal. The DEP strongly supports any Federal action to reauthorize the Clean Water Act that incorporates the same processes and goals of New Jersey in the Federal act.

Senator GRAHAM. Thank you very much, Ms. Dooley.
Mr. Ed Lloyd?

**STATEMENT OF EDWARD LLOYD, GENERAL COUNSEL, NEW
JERSEY PUBLIC INTEREST RESEARCH GROUP**

Mr. LLOYD. Thank you, Mr. Chairman.

I would like to thank you for holding this hearing and for taking the time today to listen to our views on these important issues.

We would like to first commend Senators Baucus and Chafee for introducing S. 1114. It goes a long way toward improving the enforcement under the Clean Water Act, specifically with respect to citizen suit provisions which attempt to remedy the problem created by the Supreme Court decision in Gwaltney—and I am going to come back to that because we think it needs to go further—in addressing the question of when a State can preclude citizen and Federal Government enforcement, which the bill does, and in removing the provision allowing that a single operational upset be considered one violation instead of many violations.

We would also like to commend Senator Lautenberg and the State Department of Environmental Protection in New Jersey for urging this committee—and I want to join in those requests—to use the act that was passed in New Jersey unanimously as a guide to help us bring the beneficial provisions of that act into Federal law.

We are working with Senator Lautenberg to develop a bill to do just that and hope to have that bill before this committee.

There are two major provisions that Ms. Dooley touched on that I would like to expand on a bit in the New Jersey law that we think are critical and ought to be part of the Federal law. The first is the mandatory minimum penalty provision. The mandatory minimum penalty, in certain instances where there are serious violations, as those violations are defined in EPA regulations, requires a mandatory penalty for those violations. It sends a signal to the regulated community that there is the certainty of a penalty and we have had remarkable success with it in New Jersey.

I have appended to my testimony the executive summary of the second annual report of the New Jersey Department of Environmental Protection under the act. It shows that under the act compliance is up and penalty assessments—perhaps surprisingly—are down. I think that is a good sign. We want more compliance. When we talk about effective enforcement, we are looking for increased compliance and not necessarily increased penalties. That is what we have seen under the New Jersey act.

Just to throw out a few figures from that report, between 1991 and 1992, when the act was in effect, there has been a 36 percent reduction in unacceptable ratings based upon inspections of facilities. There has been a 300 percent reduction in the failure to submit discharge reports from dischargers. There has been a 200 percent drop in violations related to DMR reporting.

The number of penalty assessments has gone up by 50 percent, but the average amount of assessments has gone down by 25 percent. Collected penalties are down 15 percent. Yet, a substantial number of penalties are still collected and those penalties are used to run the program in New Jersey.

So we think the New Jersey program with mandatory minimum penalties has been a very successful program in increasing compliance and reducing penalties. We would urge the Congress to incorporate those provisions into the Federal act.

The second provision in the New Jersey act that we think bears important lessons for us nationally is the question of economic benefit, which Senator Lautenberg elaborated on.

Just very briefly, we believe that if you don't, in assessing a penalty, take away the economic benefit from having violated the law, there is really no penalty at all. I think the best example I have heard of that is that if I am going to go out and rob a bank for \$10,000 and the penalty imposed upon me is a \$5,000 pay-back and that is the only penalty, there is no disincentive for me to go out again and rob that bank.

First, I may not get caught the next time. But even if I do, I am still ahead of the game. That is exactly what economic benefit is all about. In assessing a penalty, you must make sure that any profit the violator has made, that benefit has to be taken away. Then we start to talk about a penalty.

The other important reason for having economic benefit is in fairness to those who are complying with the law. To the competitors of that violator who have gone out and spent the money, they should not be placed at a competitive disadvantage for complying

with the law. So we think economic benefit is a critical component of the law and ought to be required in every penalty assessment.

Let me come back for a moment to some of the provisions in the act regarding citizen suits. As I mentioned, S. 1114 does address the Gwaltney problem, that is, allow citizens to sue not only for past violations but provides that we can sue for past violations only if they are repeated.

Let me suggest to the committee that the language, by requiring that the violations be repeated—I am afraid we may not be curing the Gwaltney problem. I think by requiring that it be demonstrated that the violations are repeated, we are going to generate perhaps as much litigation around what is a repeated violation as we have with respect to what are past violations. I am afraid there will be litigation about whether we have to show that the violations are repeated for every parameter that we seek a penalty on, that we must show they are repeated for every outfall we seek a penalty on.

I would encourage the committee to go further and further examine this issue and perhaps not include that language about “repeated” in the Act because I believe what we were doing was just changing the game to a different game, which will prevent enforcement from being certain and swift. If the enforcement is not certain and swift, I am afraid it is not going to be effective. I think we need effective enforcement.

With respect to standing, I think the Congress’ intent was clear when it enacted the Federal Clean Water Act in 1972 that citizens should have standing to the full extent allowed constitutionally. We think that some of the court interpretations have begun to limit the ability of citizens to bring these suits. We would urge that citizens should not have to demonstrate any more in showing they have standing to bring these suits than they do to find a violator liable for discharges.

The standard for standing should be no more difficult than the standard for liability. We would urge the Congress to incorporate such provisions in the bill.

Congressman Pallone has introduced a bill, H.R. 2727, which incorporates our recommendations, and we would urge the committee to examine that bill.

Thank you again very much for holding the hearing today. I am certainly happy to answer any questions.

Senator GRAHAM. Thank you very much, Mr. Lloyd.

Mr. Herman?

**STATEMENT OF STEVE HERMAN, ASSISTANT ADMINISTRATOR
FOR ENFORCEMENT, ENVIRONMENTAL PROTECTION AGENCY**

Mr. HERMAN. Thank you, Mr. Chairman.

If I might, I would like to say on a personal note that this is a particular pleasure for me to be here today for several reasons. Senator Lautenberg was kind enough to introduce me at my confirmation hearings. My parents still live in New Jersey and are great admirers of his.

For the past 5 years I have had the pleasure and privilege of working on the everglades litigation in Florida. Although my home

is here, my family thought I lived down there. I became well aware of all the fine work you have done with regard to the environment.

Mr. Marzulla was the assistant attorney general at the Justice Department when that lawsuit was filed. I attended Rutgers Law School. So I feel quite at home here.

[Laughter.]

Mr. HERMAN. I would like to commend Senators Chafee and Baucus for introducing the bill and you for holding these hearings.

I would like to highlight today several of the matters in the bill that we think are of particular importance. I will try to do that briefly.

With regard to the waiver of sovereign immunity in Federal facility enforcement, section 313 of the Clean Water Act should be amended to waive prospectively the United States sovereign immunity from penalties for all Clean Water Act violations by Federal facilities and to allow States to obtain penalties for violations of requirements in State laws that govern the control and abatement of water pollution.

We will need additional time to work with the committee staff on the details of this provision, but the committee amendment would parallel the policy of Federal Facility Compliance Act, enacted in 1992, which clarified the waiver of sovereign immunity under the Resource Conservation and Recovery Act.

The amendment to the Clean Water Act should not alter in any manner existing agreements, permits, compliance agreements, or administrative or judicial orders. Furthermore, the amendment should not affect existing provisions that Federal employees are not personally liable for civil penalties resulting from acts or omissions within the scope of their official duties. Federal employees but not Federal departments or agencies should be subject to criminal sanctions.

For effective enforcement at Federal facilities under the Clean Water Act and consistent with the Federal Facilities Compliance Act, Federal facilities should be subject to the same administrative compliance orders and penalties as non-Federal parties. The applicable department or agency should have the opportunity to confer with the Administrator before the administrative order becomes final.

By adopting the same enforcement scheme for Federal facilities under both the Clean Water Act and RCRA, actions can be more easily combined into one action, as appropriate, thereby simplifying enforcement for both EPA and Federal facilities and conserving scarce enforcement resources.

The bottom line is that the Federal Government wants to be treated the same as other parties and the Federal Government should comply with the law the same as other parties.

With regard to the administrative penalty cap, one of the great successes of the 1987 amendments to the Clean Water Act was the grant of administrative penalty authority to EPA. The result has been an increase in the overall level of enforcement activity. In addition, an administrative enforcement action requires only a fraction of the resources that are needed to bring a judicial case. We are examining with the Department of Justice possibilities for greater use of our Clean Water Act administrative enforcement

provisions with the goal of creating a more efficient, effective enforcement program.

The Clean Water Act should also be amended to provide authority for the agency to seek administrative penalties for violations of administrative compliance orders with appropriate due process protection for defendants.

With regard to citizen enforcement, citizen suits are an important component of the overall Clean Water Act enforcement effort. Unfortunately, the ability of citizens to maintain a suit under the Clean Water Act has been substantially eroded by the courts since 1987 when the Clean Water Act was last reauthorized. In particular, the United States Supreme Court in 1987 held that citizens could not seek penalties for wholly past violations of the act, but were limited to filing suits for ongoing violations of the statute.

In 1990, Congress clarified that citizens can file suits for past violations of the Clean Air Act. We strongly support the provisions of S. 1114 that would allow citizen suits for past violations of the act. The agency does not have the resources to enforce against every violator of the act. Citizen suits have augmented the Government's limited resources and have created an additional deterrent to non-compliance.

With regard to criminal enforcement, I would refer you to my submitted testimony. There are several provisions which we believe are in need of some technical adjustments. We are four-square for a very strong criminal enforcement program. We think the suggestions we make will tighten the provisions and enhance that effort.

Finally, with regard to the emergency powers provision, the ability to take action in response to environmental emergencies is a critical component of our agency's enforcement authority under all major statutes. However, the emergency authorities provided to the Administrator under the Clean Water Act are more restrictive than those provided under other environmental statutes.

The amendments to the emergency powers provisions proposed in S. 1114 will largely meet the agency's concerns. Very briefly, we would like to be able to initiate administrative actions rather than having to go to court for a preliminary injunction or a temporary restraining order. We think there should be an emergency action permitted when there is a threat posed to the environment and not just to public health. We believe the act should explicitly provide that the emergency powers provision applies to any person and not just to those presently identified in the act.

Also, the Clean Water Act should be clarified consistent with other statutes, such as RCRA, to allow EPA to invoke the Clean Water Act emergency provision when the discharge from a pollutant source may present an imminent and substantial endangerment and not just "is presenting".

The improvements to the enforcement provisions that have been made by previous amendments to the Clean Water Act have enhanced the agency's ability to undertake a fair and effective enforcement effort. Adoption of the suggestions I have outlined today and those set out in my written testimony would again improve our enforcement capabilities and assist us in doing the best job we possibly can.

I appreciate this opportunity to present the agency's views and I look forward to your questions, Mr. Chairman.

Thank you.

Senator GRAHAM. Thank you very much, Mr. Herman.
Mr. Roger Marzulla?

**STATEMENT OF ROGER MARZULLA, PARTNER, AKIN, GUMP,
STRAUSS, HAUER & FELD, WASHINGTON, D.C.**

Mr. MARZULLA. Thank you, Mr. Chairman.

I am indeed honored to appear before this subcommittee today. I believe I was added to the panel for diversity because, alas, I have never lived in New Jersey.

[Laughter.]

Senator GRAHAM. Mr. Marzulla, looking at you, you seem to have an extended life expectancy ahead of you with opportunities to redeem you still available.

[Laughter.]

Mr. MARZULLA. I shall look forward to that.

Let me also note for the record, Mr. Chairman, that I am not appearing on behalf of any of my clients or clients of my law firm, but I was invited here—I think—to offer such benefit of the experience as I may based upon my having served, if you will, both sides of the table, as a prosecutor and enforcer of the environmental laws, including the Clean Water Act. During my service in the Environment and Natural Resources Division of the U.S. Department of Justice from 1983-1989, and now as head of the Environment Law Section in the Washington, DC office of Akin, Gump, Strauss, Hauer, and Feld, L.L.P., I defend such cases brought against my clients.

Fundamentally, it is my view that the Clean Water Act is the greatest success story among the major environmental statutes. This is due in no small part to aggressive enforcement of that statute. In point of fact, those entities which comply with the Clean Water Act want a level playing field. They want to see that the act is going to be enforced fairly and across the board so that there will not be cheaters and so that there will not be an opportunity to profit from failure to comply with the act.

For that reason, I join Mr. Herman in his suggestion that the focus on smaller cases be handled through the field citation proposal through the increase of administrative penalties which may be awarded precisely in order to free up resources of both government enforcement agencies and the resources of private industry to focus on major and stubborn issues of non-compliance.

Let me pass, then, to the citizen suit provisions of the Clean Water Act and suggest perhaps a slightly different perspective from that of Mr. Lloyd.

Citizen suit provisions of this statute are more wide open than their brethren in the Clean Air Act. Those citizen suit provisions allow for the recovery of attorneys fees by environmental groups whom bring cases. Those attorneys fees are allowed to be recovered at the rate of private law firms even when the suit is prosecuted by modestly—compensated environmental group lawyers. Moreover, the Clean Water Act permits, and this bill would allow in even

broader terms, environmentally beneficial projects in lieu of penalties for violations. Beside depriving the U.S. and State treasuries of funds, these projects often represent the individual whims or hobby horses of the entities which brought the cases.

The cases that are generally concentrated upon by citizen suit actions are not the difficult ones, but are the simple ones, the slam dunk cases in which the entity has already reported non-compliance. The non-compliance is not an issue, so the only question is the amount of penalties and/or the amount of environmentally beneficial project that is to be created.

The result is that the resources of the Government—both the Environmental Protection Agency and the Department of Justice—are diverted to the examination of those ongoing actions, both at the outset to see whether they are meritorious and thereafter, to examine consent decrees for compliance with governmental standards. And the resources of individual companies are once again diverted to what may not be major priorities under the Clean Water Act.

Moreover, the large groups who bring those cases—usually Washington-based—tend to have their own alternative agenda to that of the government agency, both State and Federal. Indeed, the only reason for bringing a citizen suit is because the Government has declined to bring that very action.

With that background, then, I suggest that it is not an enhancement of the citizen suit provision to allow the bringing of actions for wholly past violations of the statute. The Gwaltney opinion found Congress to have accomplished sound public policy: to provide that litigation under the Clean Water Act ought to be addressed at current, persistent, ongoing violations, or violations which are capable of repetition, and that the resources of all concerned ought not be spent upon addressing wholly past violations where those violations have no ongoing opportunity to impact upon the environment.

Note, of course, that the Government can bring cases for wholly past violations and can, of course, recover those penalties.

Second, the Congress correctly addressed the question of environmentally beneficial projects in the Clean Air Act Amendments of 1990 by limiting the amount of a penalty that could be expended or allocated to such projects. I suggest a similar cap for the Clean Water Act.

Fundamentally, the statute allows for injunctive relief and it allows for the assessment of penalties. Penalties are intended for punishment. That makes sense. Environmentally beneficial projects often minimize the sting of those penalties and they divert funds from the appropriate allocation to the Nation's Treasury.

I would just like to note in closing two other provisions of concern. One is the open-ended reference to restoration of natural resources. The statute has thus far provided ample authority for addressing the contamination that has been created by violations of the Clean Water Act and it is my concern that the use of this kind of open-ended liability circumstance in effect turns the Clean Water Act into another Superfund which will be litigated over the next several years as to what the standard of liability is, what the reach of the natural resource damage is, what kind of restoration

is important, what are the appropriate remedial actions, and so forth.

And finally, as you do explore the civil and criminal penalty provisions, as Mr. Herman mentioned, I suggest that the Congress may wish also to focus upon the failure to provide any guidance, either to industry or to Government, as to which cases ought to be brought civilly versus which ought to be brought criminally. In fact, most civil violations of the act may also be prosecuted criminally creating, I think, an uncertainty with respect to appropriate deterrent.

Thank you.

Senator GRAHAM. Thank you very much.

I would like to start the questioning with the comments that Mr. Marzulla just made relative to citizen suits.

The current judicial restrictions, as several of the witnesses have stated, limit the use of citizen suits to currently ongoing violations. The proposal in this legislation would extend that to some past violations.

What have seen the practical consequences of this restriction on citizen suits to the ability of violations to be identified and remediated? What effect has it had, Mr. Herman, on the actions of the EPA through its agency enforcement?

Mr. HERMAN. Our view, Mr. Chairman, is that citizen suits complement and enhance our own program and that they are an essential part of the program. Our view is that given the diminishing nature of our resources and the great extent of area to be covered in terms of inspections and enforcement, that neither we nor the States are fully capable of handling the entire load. In fact, if you review the docket of citizen suits, my own view is that they have made an extremely salutary and constructive contribution to the development of the Clean Water Act.

There are many very, very significant cases that have been brought over the years. I would say that to the extent that past violations have resulted in, for some reason, lack of action by the Federal Government or by the State government that the same purpose for which you would allow the State or Federal Government to take an action would justify allowing a citizen to take that action.

Senator GRAHAM. Any other comments on that statement?

Mr. LLOYD. Mr. Chairman, I believe that by not allowing citizens to sue for past violations, you are really allowing those violations to go unpenalized. I think that is against the intent of Congress and defeats the purpose of trying to create the level playing field.

The problem the *Gwaltney* case has created is that it has encouraged a whole new set of motion practice in Federal court in these cases where it has totally wasted the resources of both the citizen groups and the defense bar. It has certainly made a lot of lawyers much richer than they otherwise would be, but I don't think that is what we want in an enforcement scheme. I think we want swift, certain and effective enforcement.

We would support a provision in the bill that allows citizens to sue for those past violations. As I indicated in my opening statement, I think we have to focus on the question about repeated vio-

lations as well because I am afraid that will set up a new kind of motion practice that could be just as time consuming.

I think we need to work on that language somewhat to clarify it if we can.

Senator GRAHAM. Mr. Marzulla's testimony indicated the sense that citizen suits might distort the enforcement priority, focusing on a violation that might be of a relatively lesser nature and in some ways creating political or other public pressures on EPA to take enforcement where it might otherwise have not found that to be necessary or appropriate.

Could you comment on that potential distortion?

Mr. LLOYD. Certainly, Mr. Chairman.

I frankly don't think there is a distortion. The complaints that citizens file must be filed with the Department of Justice and with EPA. So there is an opportunity for them to review them.

Frankly, I am not aware—maybe Mr. Herman is in a better position to answer this—I don't think there are many staff people, if more than one, devoted to that issue. In fact, I think what citizen suits do is allow EPA to direct their resources to other concerns. The citizen suits are bringing effective enforcement. I think there is no question about that. I don't think we are directing or misdirecting Government resources.

The other role the Government would have in citizen suits is to review consent decree settlements when they are consummated in these cases. Again, EPA and the Department of Justice routinely file one set of what I would call boiler plate comments with the Federal district judge saying, "This is our position in general," and then sometimes they file additional comments on the specific provisions of the consent decree.

I think that is probably an appropriate role for Government, a limited one, and one that does not take an inordinate amount of resources at all.

Senator GRAHAM. Mr. Marzulla?

Mr. MARZULLA. Mr. Chairman, may I expand on the point I tried to make in my testimony?

Although I would not disagree with Mr. Herman that citizen suits have played an important role—the vast majority of those suits do not focus on the hard issues. Moreover, the principal concern, from the point of view of those who are the targets of these suits, is that the privatizing, if you will, of enforcement results in two sets of standards for approaching cases, assessing penalties, determining economic harm, and other factors: one set of standards for EPA, and another set of standards for private groups which have no accountability, and which may be different than government standards, and may enforce entirely different rules.

That is my concern, that there is no appropriate dividing line between that which Mr. Herman is doing at EPA and that which Mr. Lloyd is doing with citizen suits. To say that they are basically interchangeable and that either of them can bring the suit and it is really the same thing is sort of like saying that not only can the policeman issue a speeding ticket but that any citizen can also issue that same traffic ticket.

Senator GRAHAM. Mr. Herman, and then my time is up.

Mr. HERMAN. My own view is that the citizen suits really allow us to cover a broader spectrum of cases. EPA cannot do it all. To the extent that we can concentrate on larger, more systemic matters, that is a great advantage. To the extent that citizen suits hone in on some more local matters, I think that is a great advantage to those communities.

I would say that the citizen groups are subject to all the oversight that courts have. If the suit is frivolous, it will be thrown out. If they do not prevail, their attorneys will not get attorneys fees. EPA does review and the Justice Department does review settlements. We do comment on whether or not the economic benefit or whatever other penalty is being assessed is appropriate.

I really don't have the sense that the citizen groups and their suits are really off the reservation. I think they are very much in the mainstream of the area.

Ms. DOOLEY. I would just like to echo Mr. Herman's comments that hasn't been our experience in New Jersey that these suits are frivolous. We work hand in hand with the citizens bringing the citizen suits on many cases. We haven't found the suits to be frivolous or to focus on areas that are unimportant.

I don't want to leave an impression that because we are taking some actions no others are important. We do have limited resources.

Senator GRAHAM. Senator Lautenberg?

Senator LAUTENBERG. Very briefly, Mr. Chairman, I want to thank the witnesses.

And Mr. Marzulla, don't feel deprived, not having spent part of your life in New Jersey. There is still hope, there is still opportunity, and I promise you a personal welcome when you arrive.

[Laughter.]

Senator LAUTENBERG. Mr. Chairman, New Jersey having had the industrial concentration that it had caused us a lot of problems, also because we are the most densely populated State in the country, we wanted to correct those problems as quickly and as efficiently as we could.

Your very beautiful State, Mr. Chairman, despite relatively speaking wide open spaces, has had a problem with its management of one of the great national resources, the Everglades, and is hard at work to try to correct the problems there. All of us have a stake.

Again, New Jersey is a State with a great environmental concern. Thus, Mr. Chairman, I came from the corporate world right to the Environment Committee because it was I believed—and I think the citizens of New Jersey share my views—this is the place where we can get things done that will affect not only the quality of life in New Jersey but throughout our country.

I would just like to be sure that we are not at odds on this citizen suit action. I heard Mr. Herman's response and Ms. Dooley's response to Mr. Marzulla's comments that citizen suits somehow or other pick up where Government fails to make its case known and take the action. Do I correctly characterize your view, Mr. Marzulla?

Mr. MARZULLA. My suggestion was certainly that there are appropriate circumstances for citizen suits. I have not suggested that in all circumstances they are inappropriate.

Senator LAUTENBERG. And we have heard from Mr. Herman and Ms. Dooley. I just wanted to make sure that the record reflected a fairly clear view about that. There may be shades of difference.

Would anyone disagree with the fact that penalties ought to recover any economic benefit derived from a violation?

[Chorus of noes.]

Senator LAUTENBERG. Mr. Herman, what has EPA done to respond to the IG's 1991 report that EPA wasn't recovering the economic benefit from violators?

Mr. HERMAN. Senator, that report, as I understand it, found that the recordkeeping penalty was very, very inadequate on that. We have a policy at headquarters with regard to civil judicial cases that requires the recovery of economic benefit. We are seeking to ensure that is done.

We are also encouraging the regions in their administrative cases to recover the economic benefit at a minimum.

Senator LAUTENBERG. Is it fair to say that EPA has developed the criteria for determining economic benefit, which can be put in place fairly quickly?

Mr. HERMAN. EPA has an economic benefit model which is applied and available and which we use to judge various settlements, penalty assessments that we either develop or that come to us.

Senator LAUTENBERG. States have similar models? Does New Jersey?

Ms. DOOLEY. New Jersey is attempting to develop a rule on its own economic benefit model. We started a round table approximately a year ago with environmental groups, industry, members of the legal community, and the department to come up with an economic benefit model for New Jersey. Right now, it is very similar to the model that EPA uses, but we do have two major differences in terms of company-specific return on equity, in terms of what we're using now on a case-by-case basis. We don't know what our eventual rules will look like. We plan to propose something in the fall.

Senator LAUTENBERG. Mr. Herman, should there be more opportunities for measurement of economic benefit than simply EPA? Or should EPA with its far larger resource than any of the States try to develop a yardstick or a means of measurement on economic benefit that would be uniform throughout the country?

Mr. HERMAN. Senator, our relationship with the States I think is very, very important. I think having consistency between EPA and the States is very important both for us and for the regulated community and for the public at large.

My hope and my intent would be to reach out to New Jersey and to other States with regard to the work on an economic benefit model so that we can have as much consistency as possible. This seems like the kind of thing that we should be able to reach some consensus on so that everybody knows where we stand.

Mr. LLOYD. The EPA model is the model the citizens use in our lawsuits as well and seek to ask the judge to impose penalties

based upon that model. We are working with the State of New Jersey on their regulations.

I think it is important to go beyond just the model, though, and it would be very helpful both on the Federal level and the State level to have a uniform regulation in effect that says, "Here is the model, here is the data we need to put into the model, here is how we are going to collect it," so that when enforcement actions are taken—whether they are administrative, judicial, by State, Federal Government, or citizens—that is all in place.

One thing it would do, I believe is that—one of the things that is litigated now in both the citizen suits and the other enforcement cases—we litigate over what goes into the model and what the factors are. If we have a uniform policy that lays all that out, we can cut down on that litigation and enhance the ability to enforce at all levels.

I would encourage the promotion of such a uniform policy and detailed policy.

Senator LAUTENBERG. One of the things that I find particularly onerous and difficult to deal with is invitations by various States to attract businesses, to retain businesses based on different environmental standards. It is just the worst kind of competition for economic investment. Wherever possible, I would like to see uniform standards for making judgments on conforming or enforcement of law. It is not fair to the citizens of the State that is making an invitation for them to close their eyes to violations of Clean Air or what have you.

I would like uniform standards all across the country so that we are all dealing with the same material.

Mr. HERMAN. Senator, if I just might for one second—we are taking steps at EPA to try to require States to recover economic benefit from violators. Earlier this month we issued final revisions to the 1986 policy framework for State/EPA enforcement agreements. The revisions set the recovery of economic benefit as a minimum goal in State enforcement cases.

I think that addresses your final point. Then I would reiterate that we would want to work with the States to come up with a common model.

Senator LAUTENBERG. Mr. Chairman, I thank you very much. I thank the witnesses for the opportunity to have this exchange. I may submit a few questions to our witnesses for the record.

Thank you very much.

Senator GRAHAM. If I could follow this line of questioning that Senator Lautenberg initiated relative to economic benefit recovery, there are several places in the current law in which there are caps generally expressed in fines per day or some other similar method on what can be recovered, whether it is administratively or through injunctive relief.

Do you find those penalty caps to be inconsistent with the goal of full recovery of economic benefit?

Mr. HERMAN. In some cases, they may be, Mr. Chairman. They also have several other effects. With regard to the cap on administrative proceedings, that forces cases in many cases into court which otherwise could be handled and disposed of at less expense to the regulated community and less expense to the Government.

We are going to work with the committee and with the Justice Department on trying to rectify that.

With regard to the cap that I believe is being proposed in the legislation with regard to the value of injunctive relief that might be ordered for natural resource damage, there especially in the a of the Clean Water Act that may result in insufficient recovery to cover the damage that was done.

You might have a spill which took place on one day which did terrible, terrible damage, but the maximum fine might be \$25,000. We would urge the committee to review that and to provide for a recovery of the economic benefit and the cost of repairing the damage.

Senator GRAHAM. Mr. Marzulla, do you have any comments on the proposal to eliminate or decrease the amount of the maximum penalty cap?

Mr. MARZULLA. As I indicated, Mr. Chairman, with respect to the administrative penalty cap—I think that makes a good deal of sense. The \$50,000 cases ought not be brought in Federal district court, but should be handled instead by field citation. Just how high that number should go is not entirely clear. I don't know whether Mr. Herman suggests that it ought to be a higher number. Still, it does make a good deal of sense to dispose of relatively minor cases administratively.

With respect to the so-called natural resource damage injunctive power, as I indicated—I find that provision troubling in part because it implies that such power has not heretofore existed when in fact there are many consent decrees in which the Justice Department and EPA have used their injunctive power to require that contamination resulting from acts by the defendant be cleaned up.

I am not sure what natural resources authority adds. I am fearful, as I suggest in my written statement, that because it harkens back to the natural resource damages provision in CERCLA that in fact it is going to be seen as some sort of massive new authority and it is going to end up in a great deal of litigation.

Senator GRAHAM. Any other comments on this?

Mr. Lloyd?

Mr. LLOYD. Mr. Chairman, just with respect to the cap in the statute.

We had at least one case in New Jersey where the maximum statutory penalty was lower than the economic benefit. The judge assessed the maximum penalty, but the result there was perverse in that the penalty was lower than the economic benefit. Therefore, even though the courts assessed the maximum penalty, the violator had benefited.

So I would ask the committee to consider an exception to that cap where economic benefit exceeds the statutory maximum to allow the penalty to go up to at least the economic benefit. Of course, if it is just at the economic benefit, there still has been no penalty, but at least we have recovered the benefit.

Senator GRAHAM. Any other comments on this issue?

There are two other questions I would like to cover before I have to leave for this vote, at which time we will adjourn the hearing today.

One is the issue of civil or criminal penalties for beneficial mitigation of a project. There is a proposal that the courts be given the discretion as to whether to direct the penalties to a mitigation fund or as currently to the Federal Treasury.

Any comments to that proposal?

Mr. LLOYD. Mr. Chairman, we certainly support that proposal. We have had fairly good success with those projects in New Jersey. I have to take exception to some of the things that Mr. Marzulla said earlier. Frankly, in my experience—and I have been involved in some 60 cases in New Jersey and am aware of other cases elsewhere—it is not the plaintiff that determines the project. In the negotiations we have had it has been a joint determination. Those projects are, of course, ultimately reviewed by a Federal judge. They are also reviewed by the EPA and the Department of Justice.

I think that they are not pet projects, if you will, of the plaintiffs. In fact, it is often that the defendant will come up with a project and the plaintiff will accept it.

So I think they are appropriate and helpful. We have had cases where we have had money go directly to the New Jersey Department of Environmental Protection for their water program. We view this as sort of getting a double benefit. You get a penalty and you get a beneficial project.

With respect to one point that Mr. Marzulla made, let me agree with him. It is our view of the law that money paid to these projects is not tax-deductible to the company paying for the project. Perhaps the best way to clarify that is an amendment to the Internal Revenue Code that makes it clear that mitigation projects paid for either in a settlement or court-ordered judgment are not to be tax-deductible. We certainly don't want to see tax deductions for mitigation projects that result from enforcement actions.

That may cure at least one of the problems that Mr. Marzulla has with these projects.

Mr. HERMAN. Mr. Chairman, I would like to comment on two things.

One is that the pending bill, S. 1114, does not have a minimum cash penalty along with the supplemental environmental project. We think that it must. It has to provide for at least the cash recovery of economic benefit.

Second, we think that the nexus between the violation and the supplemental environmental project possibly should be broadened some to cover multimedia problems at the facility—in other words, if there are both air and water problems, even if it is a water case, that you could address the air problem also. If there are other facilities owned by the same company that have the same problems, they could be addressed with this. But we think that supplemental environmental projects can be extremely constructive.

We do not favor, however, setting up a separate fund into which the penalty money would go. We think it should go to the Treasury.

Mr. MARZULLA. Mr. Chairman, to return to the issue that I raised in my initial testimony—an environmentally beneficial project is less valuable as a deterrent and an enforcement program than is a monetary penalty. It strikes me as rather unique to view the citizen suit provisions of environmental statutes as part of a

governmental enforcement program which imposes penalties if those provisions can be used to decrease the penalties—perhaps well below the economic benefit, for example—in return for performing some so-called good act.

It is too often the case in these cases to start off by saying, “OK, the penalty is \$1 million. How much of this can I put into a project?” Then the question is, “What is the project?” I have seen projects that involved creating parks, creating an environmental Chair at a university, dedicating money to teach people how to do water testing, and so on and so forth, some of which may be valuable projects.

But when you start with the notion, “Let’s decrease the penalty and substitute something else,” it seems to me that the question is, “Why? How does that fit into an enforcement program?”

Senator GRAHAM. I apologize, but I am going to have to leave.

Ms. Dooley, we would like to receive your comments on this. I am going to ask Mr. Leary, however, to assume the Chair and then he will have at least one other question he would like to ask. At the conclusion, we will adjourn the hearing.

Again, I wish to thank all of you who have participated so generously. I apologize that democracy is not a smooth-running operation, at least in the United States Senate. We have had these disruptions and I particularly appreciate your understanding and cooperation under those circumstances.

Thank you very much.

Mr. LEARY [resuming Chair]. Ms. Dooley?

Ms. DOOLEY. I guess I am a little confused by the comment. It hasn’t been my experience that a beneficial payment for a beneficial project is somehow less of a deterrent than payment of a penalty. I think they go hand in hand. Again, we have gotten some of the projects in New Jersey through money being used for these projects through citizen suits.

Mr. LEARY. The only follow-up question I had with respect to that was something that again Mr. Marzulla raised in his statement, which was that funds that go into these beneficial projects are funds diverted from the Treasury. I believe EPA’s statistics showed in excess of \$9 million over 4 years going into the U.S. Treasury. One doesn’t know how much that might detract from that.

The only question I had has been touched on in your opening statement. We took a lot of comments in your opening statements regarding minimum mandatory penalties. The only thing I didn’t have that I wanted on the record, Mr. Marzulla, was your reaction to the concept of minimum mandatory penalties.

Mr. MARZULLA. It depends, of course, on what the amount of the minimum mandatory penalties are, Mr. Leary.

The concern that I have about those numbers is that—to the extent that you tie the hands of a judge and require the imposition of an amount which may be inappropriate in the case of a bankrupt company, where in fact you end up taking the money out of the pockets of creditors rather than punishing the violator—in those marginal circumstances there ought to be some opportunity for the judge to depart from those penalties. That is not unlike the

authority to depart from sentencing guidelines with respect to crimes.

Mr. LEARY. If there are no other comments, on behalf of the subcommittee, I thank you all for being here. We may be submitting additional questions.

The hearing is adjourned.

[Whereupon, at 6:05 p.m., the committee was adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

TESTIMONY BY BLAKE P. ANDERSON, DIRECTOR OF TECHNICAL SERVICES
FOR THE COUNTY SANITATION DISTRICT OF ORANGE COUNTY

INTRODUCTION

Mr. Chairman and members of the Subcommittee, I am Blake Anderson, Director of Technical Services for the County Sanitation Districts of Orange County, California. I appear before you today representing the Association of Metropolitan Sewerage Agencies (AMSA). AMSA's members represent the nation's largest wastewater treatment agencies. We serve the majority of the sewered population in the United States, and collectively manage over 14 billion gallons of wastewater each day.

AMSA had the honor of testifying before the Subcommittee on June 23rd of this year. In that testimony, we addressed the issues of funding, combined sewer overflow control and stormwater management, and provided an overview of the significant role AMSA believes comprehensive watershed management should play in the reauthorization of the Clean Water Act.

AMSA is pleased to be here today to provide our perspective on the reauthorization of the Clean Water Act and the Water Pollution Prevention & Control Act of 1993,

S. 1114. We sincerely appreciate the opportunity to share our thoughts and recommendations as environmental practitioners dedicated to protecting and improving the quality of the nation's waters.

AMSA supports the reauthorization of the Clean Water Act and its goal of fishable and swimmable waters. AMSA believes that this reauthorization must use an integrated and comprehensive strategy that establishes new priorities for achieving water quality goals. The reauthorized Clean Water Act must recognize the wide range of conditions present in our nation's watersheds and provide flexibility to decision makers so that they can address site-specific conditions. It must target all impediments to ecosystem health. It must develop mechanisms for control that properly balance environmental gains and their cost-effectiveness. And it must provide the funding to implement its clean water mandates.

From our initial review of S. 1114 we believe that the Senate legislation goes a long way toward realization of these goals. Many of AMSA's concerns and priorities are present in the bill and reflected in its language. We commend Senators Baucus and Chafee for introducing legislation that clearly moves our national clean water program forward.

In previous testimony, AMSA has enumerated its perspectives by focusing on three overarching concepts: 1) putting the reauthorization into perspective; 2) reconciling our constraints, our expectations and our needs; and 3) the search for a solution. My remarks today will touch briefly upon each of these concepts, but focus primarily upon our collective search for solutions. AMSA believes a national program of comprehensive watershed management is the most effective way to protect our nation's 20 year investment in clean water, and allow us to successfully respond to the next 20 years of water quality improvement.

Putting the Reauthorization into Perspective

First and foremost, it is important to put reauthorization of the Clean Water Act into an historical perspective. This nation, its states, cities and towns have made enormous progress in the more than 20 years since the passage of the 1972 Clean Water Act.

In 1972, national standards that targeted point sources made sense because we had identifiable problems traceable to readily controlled sources. Congress provided funding, necessary deadlines and enforcement mechanisms. Coupled with a considerable amount of public support and motivation, this set the stage for our nation to successfully address many of its clean water challenges. As a result, upgraded municipal wastewater treatment facilities and source control of industrial wastewater

have significantly reduced the discharge of pollutants from point sources to the nation's waters.

Today we face new challenges. While public support for environmental progress and improvement continues, the new and emerging issues we must address are more complex and costly. Nonpoint source pollution remains a continuing problem. The control of combined sewer overflows, the management of stormwater and managing agricultural sources of pollution provide excellent examples of new clean water priorities. Today, budget shortfalls at every level of government are unprecedented, which make dollars harder to get.

Reconciling our Constraints, our Expectations and our Needs

In a reauthorized Clean Water Act we need to reconcile the constraints of the 1990's with our continued high expectations and the need to make continuing progress. Reconciling constraints with expectations within the context of the Clean Water Act will involve several things, the first of which is an increased and ongoing Federal financial commitment, in partnership with state and local governments.

The next step in this reconciliation is for all of us to refocus our concerns and priorities. We need to determine where problems still persist, establish priorities, use site-specific solutions, set realistic deadlines and maintain flexibility to solve local problems. Prescriptive national solutions do not, by their nature, provide the level of flexibility needed to consider site-specific circumstances and cost-effectively attack our priority problems.

I have talked to many interests around the country and I believe there are seven major themes that are consistently heard from Congress, EPA, environmental groups, and my colleagues throughout the nation. Here are the seven:

1. We need better science and field data for developing water quality objectives.
2. We need to manage nonpoint sources of pollution.
3. We need to use site-specific management techniques.
4. We need multi-agency cooperation.
5. We need to use nontraditional approaches to solve today's continuing water quality problems.
6. We need public involvement and stewardship to protect our watersheds.
7. We need national leadership, not national command and control.

The Search for a Solution

There is a very important temptation that we—as a nation—must resist. I speak of the propensity to attempt to fix programs that aren't broken. The Clean Water Act is possibly the nation's most effective environmental statute—a real legislative success story. AMSA was gratified to see that approach taken by the drafters of S. 1114 reflects an appreciation of the solid foundation, provided in the Clean Water Act, upon which to build. The Committee and staff are to be commended.

The recognition demonstrated in S. 1114 to fine tuning many long standing programs, as well as the need to focus attention on important areas such as pollution prevention, water conservation and, of course, comprehensive watershed management offers an excellent basis for discussion and evaluation. While AMSA will have constructive recommendations to improve and strengthen the bill, the legislation represents a significant step forward.

AMSA believes the solution for which we search is comprehensive watershed management. Comprehensive watershed management is our best opportunity to address water quality into the next century. In its ideal form, comprehensive watershed management puts all the people together who can properly plan, execute, enforce and pay for a plan, places local interests in a co-partnership with State and Federal agencies, and provides the flexibility and accountability necessary to customize a watershed plan.

COMPREHENSIVE WATERSHED MANAGEMENT

Support for a National Program of Comprehensive Watershed Management

AMSA, the U.S. Conference of Mayors and many other national organizations view a national program for comprehensive watershed management as the best way to effectively integrate successful Clean Water Act programs and ensure that limited resources will result in continued environmental improvements. Our Association spent much of the last two years coming to one clear conclusion—that comprehensive watershed management, as a means to achieve our national water quality goals, makes a lot of sense. AMSA was gratified to see, in provisions of S. 1114, that the leadership of the Senate Environment & Public Works Committee shares this significant conclusion.

Should the Subcommittee need additional support for establishing a national program of watershed management that is flexible and addresses site-specific conditions, AMSA offers the following:

Every watershed is unique. Picture if you will, the Florida Everglades; the deserts of the Southwest; the forests of coastal Washington; the Great Plains of the Midwest; the river valleys of Ohio; the Mississippi delta; and the New England states. Varying conditions abound in these regions of the country—each with different rainfall, temperatures and topography.

Sources of pollution are also unique—within each watershed, from region to region. For example, treated municipal wastewater comes from small midwestern towns and from large urban coastal areas like Los Angeles and New York. Our Nation's communities discharge their treated wastewaters not only into the Platte River—or the deep near coastal waters of the Pacific—or into the Hudson River, but also into the dry river beds of Arizona—into Long Island Sound—into the Mississippi River—into the Great Lakes—and into the fjords of Alaska. Every one of these areas and all the others you can possibly name have site-specific conditions that make them unique and nearly impossible to generalize.

We must also recognize that great tracts of this country are not metropolitan at all, but are instead rural and heavily agricultural. Here too, major differences abound. The dry wheat growers of eastern Washington, the sugar growers in the delta country of Louisiana, the cranberry growers in the bogs of New England, the corn growers of the Midwest and the cattle ranchers of Montana and Texas all have unique conditions and unique challenges. It's hard to conceive that there are water pollution control practices that could be applied equally and evenly to all of these farming activities.

The resources we must protect are significantly different from watershed to watershed as well. The unfiltered public drinking water supply of Portland, Oregon, the wetlands and estuaries of the Sacramento River delta, the fisheries of the Great Lakes and the crab fisheries of the Chesapeake—all require site-specific plans for protection and preservation.

It is based upon those realities that AMSA advocates a national program of comprehensive watershed management. Our vision, contained in AMSA's proposed legislation, the Comprehensive Watershed Management Act of 1993, calls for the development of comprehensive watershed management plans with the participation of all point sources, nonpoint sources, users of the watershed, citizens and levels of government. We have provided with our testimony our Principal Tenets that guided the development of AMSA's Comprehensive Watershed Management Act of 1993.

As we see it, the process for restoring watershed ecosystems follows rationally from a scientific analysis of site-specific conditions and the technologies available to improve those conditions. Priorities are established based on the quality and use of receiving waters, ecosystem health, and the sources of pollutants that legitimately threaten the watershed. AMSA believes that comprehensive watershed management planning must emphasize establishing priorities, maintaining flexibility and empowering local, regional and state government and the affected community-at-large to solve their unique problems.

Watershed Management in S. 1114—An Important Step in the Right Direction

Title III of S. 1114 expands existing authority for monitoring of waters, modifies the nonpoint source management program enacted in 1987, and establishes new procedures to comprehensively manage all sources of pollution in watershed areas. In this regard the legislation represents a significant step in the right direction. In particular, AMSA would like to comment specifically on several key concepts included in Section 321., Comprehensive Watershed Management, of the Water Pollution Prevention & Control Act of 1993.

INCENTIVES FOR WATERSHED PLANNING

MANDATORY VS. VOLUNTARY APPROACHES

AMSA strongly supports the incentives for watershed management planning contained in S. 1114. The incentives described in the legislation make as compelling as possible the voluntary implementation of watershed management.

AMSA would suggest, however, that in order to be truly effective, a national program of comprehensive watershed management must provide sufficient national leadership to ensure consistent implementation and evaluation of programs, while at the same time offering the maximum amount of local and regional flexibility. For

this reason, we believe that watershed management provisions, as an essential part of the Clean Water Act reauthorization, must be mandatory.

AMSA views a mandatory program as essential for two reasons. First and foremost, to facilitate the achievement of the goal of meaningful environmental benefits from water quality improvements, and secondly to define the specific components of a comprehensive watershed management program that is national in scope—and local in focus.

We recognize mandatory comprehensive watershed planning will be a large undertaking requiring careful allocation of limited personnel and monetary resources. Planning activities cannot start simultaneously and, for this reason, AMSA recommends the phased implementation of assessment and planning activities. A staged process would provide for the staggered initiation of watershed planning activities and will provide thus for the deliberate, measured initiation of the watershed planning process.

AMSA feels strongly that while the 20 years since the 1972 Clean Water Act have produced significant benefits, the future application of technology-based standards will not result in the same level of water quality improvements. Achieving tomorrow's water quality successes will be far more challenging and a change in our national paradigm is essential.

We must look at the next 20 years of water quality improvements from a new perspective. AMSA believes a shift in our collective approach to this issue must occur. While watershed management is ongoing in some areas of the country, and certainly possible in many others, it is only a national shift in our approach to addressing water quality issues that will provide the information and tools we need to truly make a difference in our nation's water quality over the next 20 years.

LOCAL GOVERNMENT DELIVERS—A BOTTOM-UP APPROACH IS ESSENTIAL

Comprehensive watershed management, in the context of the Clean Water Act, should offer a "bottom up" approach to achieving water quality improvements. S. 1114 moves in this direction by recognizing the need for "management entities". AMSA urges that the legislation go further in this regard by establishing Watershed Management Commissions. Such a Commission would provide the basis for the difficult decisions that must be made to protect and improve the watershed, to be made by those most closely involved—the stakeholders.

AMSA believes that local stakeholders must have a significant role on the Commissions. And special consideration should be given to those regional and local agencies within the watershed that now have, and will have, planning, implementation and enforcement responsibilities under the watershed management plan. This acknowledges the need for local interests to share in a partnership with State and Federal representatives.

At first glance, such a Commission could be viewed as "just another layer of government." However, AMSA would argue that it is the make-up and active participation of the Commission that makes the comprehensive watershed management concept truly effective. Today, there already exists multiple layers of local, regional, State and Federal agencies with varying jurisdictional responsibilities regarding a particular watershed. Often these agencies do not meet in a coordinated and systematic way to address the policy, operational, regulatory and financial issues of a watershed. The Commission would act as a "bureaucracy-buster" by providing the setting for these agencies to meet and to systematically address problem solving for the watershed. AMSA feels certain that the success or failure of watershed management will be determined by the type of institutional setting through which the process occurs.

MORE MANDATES . . .

OR A MOVE TOWARD AN INTEGRATED, COMPREHENSIVE APPROACH?

Headlines from across the nation decry both the need for environmental protection and the desire to keep costs at a minimum. In recent years, local governments—and in turn their citizens—have paid an ever increasing share of the clean water burden. In AMSA's needs survey, entitled "Cost of Clean", we found that local government currently provide 80-90% of total capital funding.

Environmental mandates have increased in both their number and cost, and Federal financial support of the nation's clean water program has diminished. Compelling national interests, not only environmental and public health, but economic, social and political, make necessary an aggressive and comprehensive effort to preserve existing water resources and restore polluted waterbodies and systems as rap-

idly as possible. This massive task means that we must intelligently and successfully target our clean water resources to give priority to the most serious problems and identify where we get the most environmental benefit for the least cost. This means first things first because if everything is a priority, then nothing is a priority.

We must use the reauthorization of the Clean Water Act to establish processes that will give the country an integrated and comprehensive strategy that establishes new priorities for achieving water quality goals. A national program of comprehensive watershed management will do just that.

As envisioned by AMSA, the concept of comprehensive watershed management integrates several other concepts which already exist in the Act. There are links to Section 402 permitting, Section 309 permit enforcement activities and Section 303 water quality standards, to name a few. We commend S. 1114's authors for establishing a new Section 321 in the Act, rather than proposing amendments to all related sections. Section 321 provides needed prominence for watershed planning and emphasizes the manner in which its provisions join together concepts already existing in the Act. As provisions in S. 1114 are revisited, AMSA calls upon the Subcommittee to make a serious effort to provide increased integration of Clean Water Act programs under the watershed management "umbrella".

In conclusion let me suggest the following:

AMSA believes that comprehensive watershed management should be the new foundation for the future direction of our Nation's clean water program. AMSA looks forward to working with you to broaden, strengthen and make more responsive, the watershed provisions in S. 1114. We hope to share additional recommendations via detailed written comments that we will provide to the Subcommittee in early August.

We need to consistently search for better ways of doing things—more flexibility and more attention to site-specific conditions, improved public awareness of our problems and solving our problems with the best solutions. Local consensus-building must become an essential step in the framework for reaching the environmental milestones we set.

In short, we must strive toward a better understanding of the most effective, and efficient, means through which we can accomplish our national clean water goals.

As we shift our attention toward fully restoring our watershed ecosystems, we all recognize that we have a long way to go. No one ever suggested that the task of improving and protecting the nation's waters would be an easy one—however, working together, I know we can succeed. With 20 years of success behind us, we can look to the next 20 years with confidence.

This concludes my testimony. I would be pleased to answer any questions you may have.

PRINCIPAL TENETS

AMSA's leadership adopted the following principal tenets to guide the development of the Comprehensive Watershed Management Act of 1993:

PRINCIPAL TENETS OF THE COMPREHENSIVE WATERSHED MANAGEMENT ACT OF 1993

ADOPTED BY AMSA'S BOARD OF DIRECTORS

FEBRUARY 4, 1993

1. The overall objective of comprehensive watershed management planning is to make cost-effective, site-specific decisions that achieve water quality objectives that protect the designated beneficial uses of a watershed.
2. Science must be the basis for public policy decisions.
3. All players must be at the table to equitably address future water quality objectives.
4. Local government and publicly-owned treatment works must have an active role in establishing water quality objectives for the watersheds in the which they are located.
5. Local stakeholders (government entities, sources of watershed impacts, users of the resources within the watershed, the public and others with a specific interest in how the watershed is managed) must have the clearly stated opportunity to provide recommendations and direct advice and counsel to the Governor regarding the designation of their watershed boundaries and the makeup of its Commission.

6. Progress on water quality improvement, including minimum standards of operation (MSOs), must continue as comprehensive watershed management planning moves forward. Until a watershed management plan is completed, permitting agencies that are responsible for National Pollutant Discharge Elimination System (NPDES) permits must take into account those sources within a watershed that cause water quality impairment and must accordingly exercise flexibility and discretion in exerting their regulatory authority in setting effluent limits and compliance schedules, and in conducting enforcement activities.
7. Time frames for completing a comprehensive watershed management plan must be realistic.
8. Implementation of elements of the comprehensive watershed management plan must be verified and enforced to assure equity among all sources or categories of sources of pollutants of concern in a watershed.
9. The scheduling of compliance with Clean Water Act requirements and prioritization of resources to achieve water quality objectives shall be guided by watershed plans. One expected outcome of an approved watershed management plan is that NPDES terms, conditions and limits shall be modified as appropriate to cost-effectively achieve the water quality objectives of the plan.
10. Comprehensive watershed management planning and the federal/state legislative and regulatory framework shall be compatible and fully integrated.

TESTIMONY OF CHARLES F. GAUVIN, PRESIDENT, TROUT UNLIMITED,
VIENNA, VIRGINIA

Mr. Chairman, members of the Subcommittee, I appreciate the chance to appear today to give you Trout Unlimited's (TU) comments on S. 1114's watershed planning and management provisions. TU is a national coldwater fisheries conservation organization of over 70,000 members in 435 chapters nationwide. Dedicated to the protection and restoration of trout and salmon resources, TU is vitally concerned with improving water quality and protecting and restoring aquatic habitats. Improving and strengthening the Clean Water Act (CWA) through the current reauthorization process is one of our highest priorities.

Let me start by saying that, if the great effort which this Committee undertook in drafting the original Clean Water Act had gone just a step further and addressed our nation's water quality problems on a watershed-wide basis, I would not be here today. The 92nd Congress, under Senator Muskie's able direction, correctly realized the task before it when it set out to restore and maintain the chemical, physical, and biological integrity of our nation's waters. Unfortunately, however, it did not provide the federal and state agencies with sufficient direction to accomplish that task. As a result, despite considerable improvement in the chemical and physical integrity of our nation's waters, our estuaries, lakes, rivers, and streams remain in the throes of a biological deficit.

When I use the term "biological deficit," I refer to situations such as the following:

- An estimated 106 Pacific salmon stocks (locally adapted populations that are reproductively isolated) already have gone extinct and scores of others (an estimated 214 stocks) are in jeopardy of extinction throughout the range of their habitat in the Pacific Northwest¹;
- six other native salmonids are threatened or endangered throughout the Intermountain West; and
- In all, a recent study found that one-third of all our native freshwater fish species are threatened or endangered, and one-fifth of *all* our aquatic species are now threatened².

In totality, this amounts to a potential loss of unprecedented and unconscionable biological, economic, social, and cultural dimensions. For even though our waters are degraded in many areas, they still yield considerable bounty: in 1990, fish caught in U.S. waters exceeded \$3.5 billion in direct dockside value, and served as the base of a processing and sales industry generating \$26.7 billion in consumer expenditures; in 1991, freshwater recreational fishing exceeded \$15 billion dollars while saltwater recreational fishing contributed close to \$5 billion; and according to

¹ Nehlsen, W., J. E. Williams, and J. A. Lichatowich. 1991. Pacific salmon at the crossroads: stocks at risk from California, Oregon, Idaho, and Washington. *Fisheries* 16:4-21.

² Williams, J. E.; Johnson, J.E.; Hendrickson, D. A., [and others]. 1989. Fishes of North America endangered, threatened, and of special concern. *Fisheries*. 14(6) 2-20.

the U.S. Fish and Wildlife Service, over 35 million people (age 16 or over) fished over 511 million days in 1991³.

Obviously, the human value underlying this potential loss of biological diversity is enormous. At the risk of sounding apocalyptic, let me say that it portends a wholesale and wholly negative change in our nation's aquatic and terrestrial ecosystems and the myriad human activities—commercial, recreational, and cultural—that depend on the integrity of those ecosystems.

This biological deficit is being fueled by aquatic habitat destruction that is not being controlled by the Clean Water Act. Some of the following facts illustrate this clearly:

- water quality standards are not being achieved in over one-third of our nation's waters, most of these failures are caused by nonpoint (polluted runoff source pollution)⁴;
- wetlands loss continues at an unacceptable rate, 290,000 acres per year according to the most recent, best estimate⁵;
- large, deep pools, critical to the health of Pacific salmonids, have decreased by 58% in the National Forests of the Pacific Northwest because of habitat loss from timber harvest and associated road construction; 80% loss has occurred on private lands of coastal Oregon⁶;
- fishing bans or advisories caused by the presence of contaminants in fish were in force in over 720 locations in the U.S. from 1990-1992;
- throughout the U.S., inadequate flows and ineffective fish passage caused by dams and other water diversions continue to destroy fish habitat and thwart fishery restoration efforts.

We can continue to finance our biological deficit much as we have our budget deficit, but for how long? This is a matter of disquieting uncertainty, especially in the biological context. In human terms, bankruptcy may be only temporary, but extinction is forever.

Comments on the Watershed Planning Provisions of S. 1114

Let me now turn to S. 1114 and begin by saying that, while it points in the right direction, it also contains serious flaws. The bill correctly points in the direction of watershed management and planning, but it fails to provide the direction necessary to restore and maintain the chemical, physical, and biological integrity of our watersheds.

Watershed planning *should* provide a better way for EPA and the state agencies to identify and address *all* sources of pollution and other forms of physical and biological impairment, such as instream flow problems. It should emphasize identification and protection of waters that meet water quality standards and remaining high quality waters for inclusion in antidegradation programs and prioritize reduction of pollution threats to these areas. It should identify and prioritize restoration projects for various waters, including wetlands and key riparian zones. It should not facilitate downgrading of stream uses, lowering of water quality standards, or grant extension of permits in the name of "flexibility" for local or regional areas.

Most importantly, it should be a comprehensive state-wide and nationwide approach to "water pollution prevention and control," the very essence of S. 1114. It should not be a rarely-used, completely voluntary, ineffective tool that sits idly in the federal/state water pollution control toolbox.

I am concerned that the watershed planning provisions of S. 1114 are not strong enough on the positive elements listed above, but do allow opportunities for too much slippage on existing water quality standards and designated uses.

Sections 301

Section 301 would replace existing Section 305(b), which currently requires water quality reporting every two years. Monitoring of waters, and associated 305(b) re-

³ U.S. Department of the Interior, Fish and Wildlife Service and U.S. Department of Commerce, Bureau of Census. 1991. National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. U.S. Government Printing Office, Washington, DC 1993.

⁴ U.S. Environmental Protection Agency (EPA). 1992. National Water Quality Inventory: 1990 Report to Congress.

⁵ Dahl, T.E. and C.E. Johnson. 1991. Status and Trends of Wetlands in the Conterminous United States, Mid-1970's to Mid-1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 28 pages.

⁶ Thomas, J.W., et. al. 1993. Appendix 5-K from Viability Assessments and Management Considerations for Species Associated with Late-Successional and Old-Growth Forest of the Pacific Northwest. U.S. Forest Service, U.S. Department of Agriculture.

ports, are critical to the achievement of CWA goals. Extending reporting requirements to five years will only serve to reduce pressure on states to improve their water quality control programs, and reduce the amount of information that citizen conservationists have available to use in their water quality advocacy efforts. TU opposes this change unless Section 301's monitoring and reporting provisions are strengthened, including the changes recommended below.

First, I suggest the goal of Section 301(b)(3) should be to develop monitoring requirements that fully assess the chemical, physical, and biological integrity of subject waters. This requires monitoring for all known or suspected pollutants in the water column, sediment, and biota. It also requires assessing the effects of instream flow modifications from hydropower projects and other diversions. I know that the Clean Water Act's overall jurisdiction here is limited, but no watershed planning or monitoring program is worth much if it does not address instream flows.

In addition, we have seen a troubling tendency on the part of states to classify waterbodies as "fully" in attainment despite clear evidence (fish and shellfish and bathing advisories and aquatic species loss) to the contrary. Section 301 thus should direct EPA to develop uniform standards to guide state attainment decisions.

Finally, in Section 301(b)(2)(A)(i), use of the term "balance" is insufficient. Even severely damaged habitat eventually recovers some biological balance. For restoration and maintenance purposes, however, the goal should be "balanced and diverse" populations of shellfish, fish, and wildlife.

Section 302

Section 302 provides the guts of the new watershed planning and management provisions of S. 1114. Again, while we support the concept and direction of Section 302, several problems are immediately apparent. First, Section 321(a)(1)(c)'s reference to "long-term social, economic, and natural resource objectives" is deeply troubling. This could be interpreted as somehow allowing states, in their management plans, to downgrade water quality standards and criteria without complying with existing Section 303's requirements and applicable regulations. Although economic, social, and natural resources objectives are clearly relevant considerations in defining water quality goals, the provisions of existing 303 and EPA regulations should control the process.

Second, Section 321(b)'s designation provisions harken back to the problems which have arisen with Section 208 under the 1972 Act and Section 319 under the 1987 Act. Allowing states to designate watershed management units on a voluntary basis ignores the simple rule that all land area is part of a watershed, and all parts form an integral whole. Making the program voluntary means that it is likely to fail. Allowing states to redraw watershed boundaries means that we will continue to see abuse and destruction of wetlands, floodplains, and perennial and ephemeral tributary streams. If there is any lesson in the Pacific Northwest salmon story it is that we cannot allow land disturbances to degrade instream and riparian areas.

To make Section 302(b) effective, you must make it mandatory. To make it scientifically sound, you must make it apply to the landscape in a manner that protects all wetlands, floodplains, and tributaries. In this regard, I commend to your attention to Appendix 5-K of the Forest Service's recent report (referenced above), which is the aquatic/fisheries basis for the Administration's recent Forest Plan for old growth/late successional forest ecosystems.

Third, in Section 321(b)(2), use of the terms "water and sediment quality" fails to address what we have witnessed over the past 20 years: attainment status for water quality standards with concomitant species depletion or extinction. If "biological integrity" has any meaning, it is not that species diversity remains relatively constant. In many cases, this will not even occur even if the habitat in question meets water and sediment standards. Therefore, we request that you include the words "or other impairment of the chemical, physical, and biological integrity" of subject waters in Section 321(b)(2). Further, I recommend that each designation under this provision should also identify opportunities for restoration of degraded physical and biological habitats, including wetlands, riparian areas, and instream habitats.

Fourth, opportunities for citizen conservationist participation, through public notice and comment, petitioning authority, and opportunity for judicial review, should be added to the watershed management provisions to be at least equivalent to other CWA programs. For example, in Section 302(b)(4), EPA approval of a watershed designation should require public notice and comment. Also, citizen conservationists should be given the opportunity to petition Governors to designate watershed management units. Further, in Section 302(g), approval of watershed plans is subject to public notice and comment, but unlike Section 303, it is not clear that EPA approval is subject to judicial review. Language should be added to this section

to clarify that EPA approval of a watershed plan is an action that does allow judicial review.

Fifth, protecting waters currently meeting water quality standards and remaining high quality waters should be a major point of emphasis of watershed plans. Unfortunately, lines 20-24 of section 321(g) refers to Tier I antidegradation only. Either here or elsewhere in the criteria for plan approval, there must be a requirement for development and implementation of a full antidegradation program for the watershed, with cross-reference to the new antidegradation section of the bill.

Sixth, EPA must maintain a strong role in development and oversight of watershed plans. Therefore, TU does not believe that it is appropriate for EPA to delegate to the state any aspect of watershed planning for which EPA currently has review, oversight, or approval responsibilities, such as water quality standards, wasteload allocations, and NPDES program elements, including Section 402(c) permit veto authority.

Finally, language in Section 321(g) Subsection 3 appears to substantially weaken existing point source requirements. This provision allows waivers or lengthy extensions from water quality-based requirements for point sources. This provision may wipe out the net gain in water quality improvement that is intended to be a product of watershed management TU opposes this provision and recommends that it be narrowed significantly or deleted.

I have addressed the basic problems we have uncovered with respect to Sections 301 and 302. I will conclude by noting that the Congress has a tremendous opportunity in Sections 301 and 302 to direct the course of much more than future watershed planning and management. Depending on how it frames Sections 301 and 302, Congress can truly determine the success of future watershed protection and restoration.

We at Trout Unlimited have some experience with watershed protection and restoration, a good example being our recent work on protecting and restoring author Norman McLean's beloved Big Blackfoot River in Montana. Success in these endeavors depends on having scientifically accurate information, protecting the remaining best habitat and water quality, and restoring key habitat in the watershed. Based on our experience, I believe that, although directionally correct, the watershed management and planning provisions of S. 1114 have serious flaws and, unless strengthened, will not yield effective watershed protection and restoration results.

Thank you for the opportunity to appear before the Subcommittee today.

TESTIMONY OF CURT SPALDING, EXECUTIVE DIRECTOR, SAVE THE BAY, PROVIDENCE, RHODE ISLAND

Save the Bay is Southern New England's largest non-profit environmental organization. We are dedicated to a clean and healthy Narragansett Bay that people enjoy. The Narragansett Bay Watershed extends far into Massachusetts and covers most of the State of Rhode Island. For twenty-three Save the Bay has aggressively advocated solutions to environmental problems throughout the Narragansett Bay Watershed. We appreciate the opportunity to forward our perspective on Watershed Planning and the Watershed Planning Provisions in S. 1114.

During Save the Bay's twenty-three year history, the organization has consistently promoted a strategic planning approach for the prevention and reduction of water pollution. Save the Bay has advocated this approach recognizing that improvements in the water and habitat quality will not easily be solved with any single action.

In this testimony I will summarize our experience with strategic environmental planning in the Narragansett Bay Watershed, present Save the Bays' view on how Watershed Planning can advance the protection and restoration of waterbodies, and comment on the Watershed Planning Provisions of S. 1114, to amend and reauthorize the Federal Water Pollution Control Act.

STRATEGIC ENVIRONMENTAL PLANNING IN THE NARRAGANSETT BAY WATERSHED

As point source discharges have been reduced, non-profit pollution sources have increased. More and more land is being converted to roads, highways, malls, subdivisions and industrial parks with little thought about their cumulative effect on water and habitat quality. In Narragansett Bay, we have seen considerable reconvert in upper bay water quality because of improvements in sewage treatment. At the same time Greenwich Bay, one of the largest and most productive shellfish areas in Narragansett Bay, has been closed to shellfishing due to polluted runoff.

Our organization has been involved with dozens of Watershed Management Planning efforts. These Watershed Planning efforts have varied exponentially in complexity, watershed size, and success. Several of these Watershed Planning efforts are highlighted below.

Upper Bay Watershed

- Before the Federal Water Pollution Control Act was enacted, planning efforts were well underway to solve gross pollution problems in upper Narragansett Bay. In response to these initial efforts, primary and then secondary treatment plants were built in the urban centers of Providence, East Providence and Pawtucket.

COASTAL WATERSHED MANAGEMENT

- Issues involving coastal access and land development became paramount in the early 1970s and a plan was developed to manage Rhode Island's coastal resources. The Coastal Resources Management Plan (CRMP) has been adopted and amended over the years to include "special area management" plans or sam plans. These plans were created to deal with sensitive coastal watersheds that needed site specific management. The Sam Plans have been adopted and revised over the past five to ten years.

SECTION 208: AREA WIDE WATER QUALITY PLAN

- Beginning in 1975, Rhode Island also attempted to develop a Comprehensive State Water Quality Management Plan. The plan took more than five years to develop and was known as the Section 208 Plan. It took its name from the section of the Clean Water Act that described the method and federal requirements of State water quality planning. The section 208 plan did identify the need for a significant improvement in the operation of the field's point sewage treatment plant in Providence which was implemented. However, dozens of other priority items were never accomplished.

SCITURATE RESERVOIR MANAGEMENT PLAN

- The State has recently (1990) completed a Comprehensive Watershed Plan for its largest public drinking water reservoir. Implementation of the is going forward and recommendations for state and local actions are being supported.

NARRAGANSETT BAY WATERSHED MANAGEMENT

- In 1985, Narragansett Bay was accepted into the National Estuary Program and the most recent Watershed Planning effort began in Rhode Island. This time the planning effort would cross State lines (60 percent of the Bay Watershed is in Massachusetts). The final Comprehensive Conservation and Management Plan was issued in late 1992. Since that time, implementation of the plan has been slow largely because the planning process failed to galvanize support for the plan's recommendations.

Distilling this experience, the most successful strategic Environmental Management plans in Rhode Island are characterized by successfully building support for a clear action agenda. The priorities and action items of these success stories are as dynamic as the systems they seek to restore and protect. Save the bay believes that unsuccessful or semi-successful Watershed Management Plan lacked one or more key elements. The key success element are:

- A governance/planning committee that truly represents all groups with political, regulatory or resource protection/use interest;
- A clear and open process that decides which resource protection issues are being adequately addressed and which are not;
- The endorsement and support of most regulatory/planning agencies required to implement strategies and work plans is secured;
- The plan is updated and reviewed periodically, preferably on a five year schedule; and
- Updates and reviews are based on continuous strategic water and habitat quality monitoring

UTILIZING STRATEGIC WATERSHED PLANNING

A Comprehensive Watershed Management approach is the best approach when the employment of established point source and non-point source programs prove to be inadequate to achieve water and habitat quality goals. An example best illustrates this point.

Dividing Warwick and Cranston is the Patuxent River. This River is severely degraded. To restore the Patuxent, save the bay supports a strategy that:

1. Controls point sources using wasteload allocation analysis.
2. Maximizes low technology management practices (i.e. cleaning storm drains, sweeping parking lots etc.) To reduce polluted runoff.
3. If after pursuing these strategies, it is unlikely that the water quality standards for the Patuxent cannot be achieved, a Comprehensive Watershed Management Plan should be developed and implemented focusing on more polluted runoff control, or other strategies, such as in-stream aeration and habitat restoration projects.

Polluted runoff is more diffuse, cumulative in effect, and is directly related to local, state and regional land use decisions. Regulating non-point sources of pollution cannot be done by writing a thousand permits. Controlling and mitigating non-point sources encompassing everything from educating individuals about consumer choices to restoring and protecting riparian wetlands. Watershed Management clearly is the appropriate tool for this job.

A good Watershed Management Plan not only contains the key elements listed above, it must also have the support of the stake-holders and sufficient funding to be implemented. This does not imply that a new bureaucracy needs to be created to implement and enforce a plan. If a plan is created by all interested parties (political and governmental players, public interest groups, resource protection advocates, and resource users), implementation can be carried out through coordinated but separate local, state and federal actions. Naturally, some portions of a good watershed plan will need the cooperative effort of one or more agencies.

This type of implementation and enforcement requires appropriate federal and state incentives and dis-incentives. Incentives should be similar to those found in section 6117(g) of the Coastal Zone Management Act and the Clean Air Act of 1990. For instance, section 106 funding, and most other federal assistance provided through the Clean Water Act, should be tied to successful Watershed Management Implementation. A very effective approach would be to withhold federal funding (under any program) from any responsible agency for nonperformance under the management plan.

Federal transportation funding to states should be linked to successful Watershed Management Plan implementation. The allocation of federal transportation money has a significant influence on local land use decisions which contribute to non-point source pollution in watersheds, not to mention the increase in runoff from the road construction itself.

As stated, Watershed Management Planning should be used to identify additional strategies to reduce non-point source pollution. The majority of non-point source pollution is caused by stormwater runoff, whether it runs off a interstate highway or a 300 acre cornfield. Not all stormwater discharges can be (or should be) regulated through the new stormwater discharge permit program.

Save the Bay believes Watershed Management Plans can build local consensus to allow more comprehensive actions to deal with stormwater runoff. Just as utility districts were established for sanitary sewerage service, so can they be established for stormwater runoff. Stormwater utility districts have been established in at least 50 major cities and counties in the United States. Small annual fees (typically 24 dollars per year per household) provide funding for water quality improvements, flood abatement projects, and infrastructure maintenance. New or increased stormwater discharges must be approved by the district. These stormwater programs have worked well in the areas where they have been implemented. Save the bay believes that stormwater utility districts must be an essential component of a watershed management plan.

In addition, Save the Bay believes that Watershed Management Plans should contain minimum land use standards and performance criteria. The guidance document issued for the coastal 6217(g) program—the blue book—would be acceptable as a minimum standard. Save the bay stresses that this guidance document should be used only as a *minimum*. Watersheds that already have water quality problems due to non-point source pollution should require stricter performance criteria such as mandatory minimum setbacks from wetlands, streams and rivers of at least 250 feet, regulatory street sweeping and catchbasin cleaning, wastewater management districts for unsewered areas, reduced pavement area and parking space requirements for new developments, and village or cluster zoning for residential areas. A Watershed Management Plan should also create state and local policies that encourage reinvestment in urban infrastructure rather than subsidizing suburban sprawl.

PROBLEMS WITH WATERSHED PLANNING AS PROPOSED IN S. 1114

Save the Bay is concerned about the proposed approach to Watershed Management Planning contained in S. 1114. Our concerns are:

1. Federal subsidies for doing Watershed Planning are too large. "Ownership" of a Watershed Management Plan is encourage by local investment in both time *and* dollars. Large amounts of federal funding should be reserved for plan implementation.
2. Watershed Management Plans are not mandatory for all waterways and waterbodies that are classified as "non-attainment" or "partial attainment" areas. Where the established strategy of point and non-point source control will not achieve water quality goals, Watershed Management Plans should be done. Other Watersheds should qualify for Management Planning efforts only after these priority Watershed Management Plans were approved.
3. There is no requirement to incorporate previous Watershed Management Planning efforts. As noted above, Rhode Island has produced many Watershed Management Plans for a variety of Watershed areas. The Narragansett Bay comprehensive conservation and Management Plan and the Scituate Reservoir Watershed Management Plan are two examples of valid Watershed Management Plans. These plans need to be implemented, not redone. Over the course of time they should be updated and revised, not relegated to the scrap heap and recreated with new federal funding.
4. The requirements for public participation are not well defined. Public participation should be defined beyond "maximum extent practicable". More language should be added defining public participation and establishing how issues are identified and priorities are set.
5. In some circumstances, Watershed Planning may lead to less aggressive point-source permit requirements. As mentioned earlier, we have an entire river watershed in serious nonattainment—the Patuxent River Watershed. The watershed hosts three sewage treatment plants and one major industrial polluter. The three sewage treatment plants are under a court ordered consent decree to improve their sewage treatment facilities to tertiary standards. It is clear to all Patuxent stakeholders that this action will not be enough to attain fishable/swimmable water quality standards. Save the Bay know that the non-point source pollution will have to be mitigated and prevented. Aware of this problem, congress included a 13 million dollar federal grant in the Intermodal Surface Transportation Efficiency Act (ISTEA) to remediate a large stormwater discharge from interstate 95.

If the Watershed Planning approach proposed in S. 1114 was in place five years ago, the three sewage treatment plants may not have been required to upgrade their facilities. Instead, there may have been a four year Watershed Planning process with a possible ten year implementation schedule. The process would have been heavily politicized because of the serious fiscal problems in the three cities.

The Watershed Planning provisions in s. 1114 may represent an almost irresistible temptation to local governments to delay upgrading sewage treatment plants. Aggressive requirements for nonpoint source pollution load reductions should not be used as an excuse not to reduce point source pollutant loading. Instead, Watershed Planning should encourage further innovations in point source treatment technology as well as work towards a better understanding of non-point source pollution control and mitigation. to do any less would be a betrayal of every citizen's right to clean water and a healthy environment.

July 26, 1993

**THE WESTERN GOVERNORS' ASSOCIATION TESTIMONY
ON
CLEAN WATER ACT AMENDMENTS
S-1114**

Before the Senate Environment and Public Works Clean Water, Fisheries,
and Wildlife Subcommittee

INTRODUCTION

Good afternoon. I am Lorna Stickel, Chair of the Oregon Water Resources Commission, and Chief Planner at the Portland Water Bureau. I am also a member of the Western States Water Council (WSWC). I have been asked to testify today on behalf of Governor Barbara Roberts, who is co-lead governor for water for the Western Governors' Association (WGA). The WGA and WSWC work together to provide strong leadership in developing regional solutions for water issues in the eighteen western states, and I have been involved in most of those activities. I am pleased to represent Oregon, the Western Governors' Association and the Western States Water Council in testifying on Title III of S-1114, WATERSHED PLANNING AND NONPOINT POLLUTION CONTROL.

Oregon has been on the forefront for testing watershed based natural resource management practices and watershed planning. We are proud of recent programs initiated to promote integrated watershed planning and watershed restoration. The program in Oregon is evolving rapidly, and passage of S-1114 could give the state an additional boost to make the program a success.

In a series of broadly representative workshops over the last three years, the Western Governors' Association and Western States Water Council have explored ways to improve western water management broadly. These workshops lead to a series of principles which endorse "bottom-up," broadly representative, flexible approaches to problem solving at the watershed or "problemshed" level. These "Park City Principles" are expressed in the attached WGA policy resolution (Resolution 92-007).

The Park City Principles strongly support the concept of comprehensive watershed management under the Clean Water Act. To provide greater definition to the concept, the WGA and WSWC have developed position papers regarding watershed management under the Clean Water Act which are enclosed. In particular they emphasize that water management is complex with many interests and values needing to be considered: water

quality, water quantity, habitat, wetlands, riparian areas, flood control, hydropower generation, and recreational, cultural, commercial, agricultural, industrial, and municipal uses. They view watershed management as an approach that offers great opportunities by allowing a focus on the most critical problems that affect a watershed. Further watershed management has the potential to foster cooperative problem solving to improve the environment in a cost-effective manner. It provides a means of developing an "ecosystem approach" relative to the protection of water quality and related values.

Although the Clean Water Act will focus on water quality issues, WGA's paper emphasizes that watershed management in states is not likely to be limited to discrete water quality issues, but instead may ultimately be used by the states to address the gamut of interconnected quality and quantity issues that arise from the use of this valuable resource. Therefore, the amendments to the Clean Water Act should allow the states to maintain flexibility to deal with all of the other interests and values, and should facilitate states' ability to address the issues holistically.

To encourage the benefits of a watershed approach under the Clean Water Act, the WSWC position paper states that the Clean Water Act should:

- (1) encourage, but not mandate, a watershed approach to water and natural resource management and protection;
- (2) allow flexibility to states and local entities to craft basin-specific goals and programs that are prioritized on the basis of risk to quality-of-life, human health, and ecological concerns;
- (3) emphasize performance, not planning;
- (4) not interfere with the rights of states to allocate water supplies;
- (5) allow states to use existing authorities and programs to establish watershed entities to meet their needs as they understand them;
- (6) require EPA to provide technical, financial, and research assistance; and
- (7) provide federal funding to support watershed management.

Title III as proposed addresses the principles listed very well. Therefore I am here to speak in support of the proposed amendment.

OVERVIEW OF TITLE III - SEC. 302 COMPREHENSIVE WATERSHED MANAGEMENT

In S-1114 Title III SEC. 302, the proposed new SEC. 321 sets out an excellent "Findings and Purpose" statement that stresses the need to integrate water quality with other natural resource management objectives. The bill establishes a framework that is very similar to one developed in Oregon last year. It establishes clear guidance and incentives, while remaining voluntary and flexible. It recognizes the importance of locally developed on-the-ground solutions. Programs need to set measurable short and long term targets.

implement both projects and actions and monitor results to show whether programs need to be adjusted.

The bill calls for a statewide watershed assessment. Independent of S 1114, Oregon is preparing to conduct a general statewide assessment of watershed health using a method prepared by EPA staff. We believe the assessment will help set priorities for state attention and funding allocations. Our work could probably serve as a prototype for other states.

The funding and incentives provided would be of real assistance to the states in carrying out watershed programs. However, in the long run, the restoration of watershed health is likely to require a far higher level financial commitment from all of those involved in the solutions than is provided in the long range funding level.

THE OREGON EXPERIENCE

Oregon has a long history of water quantity and quality planning on a basin and subbasin level. Most of those early plans are oriented to regulations rather than a broader range of actions. The state is implementing, as the result of a court decree, water quality oriented plans in 15 water quality limited watersheds. Oregon has taken the lead in developing a waste load allocation program in water quality limited watersheds. This watershed approach is an essential part of coming into compliance with water quality standards. Other watersheds in Oregon are the subject of planning largely because of endangered species listing or proposed listings. In these watersheds the whole watershed ecosystem is often of concern, including in many cases, water quality standard violations, inadequate streamflow, habitat loss and failure of altered watersheds to provide natural functions.

Watershed planning for water quality source control is the strategy followed in several other programs including, the Coquille Near Coastal Water Project, the Tillamook Rural Clean Water Program, the Columbia River Bi-state Study, the Willamette River Water Quality Study, and numerous Clean Lake projects. Many recent watershed programs emphasize partnerships and use demonstration projects, education, collaboration and cooperation to achieve results.

A reading of the Oregon documents will demonstrate to the committee that this state is well on the way to a voluntary program that matches very well the Title III proposal. Some of the key aspects to keep enthusiasm and support have been:

- That the program is locally based;
- Powers for implementation, however, are not transferred;

- The state already has a number of good regulations and programs to prevent additional problems for the environment;
- People are fearful of the potential economic and social impact of continuing to implement the Endangered Species Act, species by species;
- The program development is voluntary and flexible.

Key elements of a comprehensive watershed approach include:

- Involvement of all stakeholders;
- Attention to all watershed functions and conditions relating to its health;
- Adequate resources for planning and implementation;
- Clear goals and definite time frames to achieve them;
- Adequate support for research that shows the relationship between practices and problems/solutions;
- Incentives and sanctions.

Some of our experiences are briefly described here.

- The legislature established the Governor's Watershed Enhancement Board in 1987. The Board includes decision makers from 10 state and federal agencies. It provides grants for demonstration projects that enhance watersheds through non-structural means and grants for education projects that promote sound watershed management. Since then, nearly 2 million dollars have been awarded for 62 major projects and many more small grants. (Program status report enclosed).

- The Governor's Forest Planning Team, established in 1987 by executive order, has been reviewing National Forest and Bureau of Land Management plans since then. The state has sent a consistent message to the USFS and BLM planners of the need to assemble data and make decisions on a watershed basis rather than other administrative lines. For the most part all Forests and BLM districts revised at least the data and many decisions to reflect watershed conditions and impacts of proposed management activities on watershed health. The new Clinton Forest Plan strongly promotes the watershed approach.

- The Northwest Power Planning Council, during the eighties, set a goal of doubling fish runs in the Columbia basin, and as a result Bonneville Power Administration (BPA) funded stream enhancement projects through out the northwest. Projects were not developed on a watershed basis and as a result many failed to produce the expected results. As a next step the Power Council requested that Subbasin plans be prepared throughout the Columbia to target

high priority actions to enhance fisheries. However, BPA funding focused on instream projects, when many of the root causes of habitat problems are due to land management practices and impacts.

After the Snake River salmon species were listed under the Endangered Species Act, the Northwest Power Planning Council called for BPA to fund model watershed programs in each of the affected states. Oregon selected the Grande Ronde Basin. An active locally based program is now underway with full participation also by state and federal agencies. The Grande Ronde Model Watershed Program is identifying several early actions to begin the recovery.

- In 1990, following a legislative session that debated but did not resolve the issue of needing more locally based water resource planning, state agencies developed a pilot stream restoration program. The program was tested in a watershed of the John Day Basin. A stream restoration coordinator worked with a locally appointed basin council, state and federal agencies, tribes, landowners and interest groups to develop an action plan for the Middle Fork John Day Basin. Because of the many prior planning efforts in the basin, this program was assembled in only six months. It uses a watershed approach to stream restoration and has served as the basis for implementation since then, with several successes. Additional action plans are now being prepared in the basin with the help of Soil and Water Conservation Districts and the Bureau of Reclamation.

- In 1992 the state's Strategic Water Management Group (SWMG) chaired from the Governor's office and composed of agency directors of twelve resource agencies and the Oregon Executive Department, formally developed a new watershed management strategy. The strategy calls for a statewide assessment of watershed conditions, public values in each watershed, and likelihood of watershed program success. It promotes voluntary formation of watershed councils especially in high priority watersheds of the state. The councils would operate as local organizations, with partnership agreements with all participating government, tribal, and organizational interests. Organizational and procedural flexibility is written into the framework. The Councils will conduct more specific watershed assessments, develop management goals and an action plan that includes site-specific measures to protect and restore watershed health while, to the greatest degree, meeting economic, social and cultural objectives. SWMG would review and sign off on the action plans. The SWMG Watershed Management Strategy report is enclosed.

This process is being formally recognized by the Legislature in HB 2215 (enclosed) this session. It has passed both houses and has only to go through conference committee and the Governor to become law. The law does not

codify the process, but sets it up as a four year pilot program. The proposal gained wide support among interest groups, but in fairness there was also a high level of nervousness about whether this would create another layer of government and whether a voluntary program could achieve results. We are confident these concerns will be allayed as the program is implemented. Based on line item funding through EPA, one local council has already formed, the McKenzie River watershed. The Grande Ronde Model Watershed Board will also likely follow this process.

- In a major effort to manage resources holistically, nine state natural resource agencies teamed together to prepare a funding proposal to restore watershed health and sustainable production in two critical basins of the state. The proposal provides funds to support watershed councils, implementation, and state agency staff to participate in the program. State staff from six agencies would be housed together in the field, to help develop the database, watershed objectives, implementation options, project proposals, technical assistance and monitoring needed to accomplish the program. This proposal is likely to receive at least 7.5 million in funding for the coming biennium. (Description enclosed).

SUGGESTIONS TO IMPROVE THE BILL

The coordination of potential federal funding sources to implement water quality and watershed health restoration is critical. The proposed interagency committee to support comprehensive watershed management and planning is not given any specific charge. One key role could be to evaluate the adequacy of the combined federal funding sources to support and promote this voluntary program.

One area of concern is the use of the term "management entity" for both planning and implementation on page 85 and wording of the EPA approval criteria on page 90 lines 4 - 6. In the Oregon program, power is not transferred to a single entity. A watershed council coordinates planning and oversight of implementation, but the actual implementation will be carried out by the partners who retain legal authority and funding. Based on federal and typical state organizational structure, watershed planning will include multiple agencies. It is not realistic to require one entity to have full implementing responsibility. We would prefer wording such as "entity or entities" or insert the notion of an entity responsible for coordinating implementation and funding of the plan.

Another concern relates to the planning standards and time frames on watersheds when planning is prompted by ESA listings or other reasons. In these cases, water quality violations may or may not have the most urgent

need for attention. Current (new) wisdom is to build environmental improvements out from the remaining good quality "refuges" in a watershed rather than working on the worst problems first. If possible the law should recognize and endorse this strategy and perhaps in some instances allow different time frames for meeting standards in the "worst" areas provided that the refuge strategy is being implemented and a trend toward compliance is measured. The ten year time frame appears reasonable. We suggest that in SEC. 304. NONPOINT POLLUTION CONTROL, the implementation provision on page 104 should allow the three year time frame or the schedule as approved within a watershed plan developed under SEC. 321.

CONCLUSION

The proposed TITLE III - COMPREHENSIVE WATERSHED PROGRAM articulates an appropriate and constructive program and role for the EPA in the Clean Water Act. States and the federal agencies are all on a rapid learning curve for watershed management. In recognition of the fact that many entities are turning to watersheds because they make sense as a focus of management, WGA and the Western States Water Council are planning a meeting this fall of representatives of those entities to share their plans and to develop ways to coordinate. Representatives will be invited from EPA, the Soil Conservation Service, the Forest Service, the Bureau of Land Management, the Fish and Wildlife Service, the Bureau of Reclamation, the Corps of Engineers, the power marketing administrations, the Federal Energy Regulatory Commission, state agencies (water, wildlife, agriculture, and environment) local entities, and non-profits focused on resource management.

We haven't always done a good job in devising mechanisms which will accommodate such a diverse group of interests. This Act deserves credit for trying to do so. It is important to maintain the flexibility that will promote solutions tailored to varying state issues, management structures and laws. The answers lie within the specific targeted watersheds and developing them at the watershed level will provide the local buy-in that can achieve lasting results. Addressing environmental issues on a watershed basis holds great promise because it fosters the most efficient use of public resources and participants.

PROPOSED WATERSHED APPROACH TO THE CLEAN WATER ACT

Rationale

Effective water management is complex. There are many interests and values that need to be considered: water quantity, water quality, habitat, wetlands and riparian areas, flood control, hydropower generation, and recreational, cultural, commercial, agricultural, industrial and municipal uses. A watershed approach to water management involves integrating decision making processes and actions so that a more holistic view of the resource can be taken and so that individual actions are coordinated and work together. A watershed approach does not involve derogation of federal or state authority. However, it is grounded upon the idea of concrete local involvement. At its most basic, watershed management involves coordination between all levels of government, with the primary responsibility for crafting the details of a management scheme reserved to local actors, with substantive guidance and assistance from the state and federal levels.

The rationale for approaching water and related resource questions on a holistic watershed basis is the gains that can be made in terms of protecting and enhancing water quality and other social, economic and ecological values simultaneously.

This briefing paper will outline a potential scheme for incorporating watershed management authorities in the Clean Water Act. Although the paper will focus on water quality issues and the CWA, it is crucial to note that watershed management should not be limited to discrete water quality issues, but should ultimately be used by states to address the gamut of interconnected quality and quantity issues which arise from the use of this valuable resource. *Therefore, amendments should not obstruct the ability of states to deal with all of the other interests and values beyond water quality, and ideally should facilitate states' ability to deal holistically with them.*

Watershed Management under the Clean Water Act

The CWA already provides the statutory encouragement, as well as some incentives, for localities to undertake water quality-based watershed management activities. However, some changes to the CWA may be necessary. These include the development of inclusive processes which involve a broad range of players; greater coordination between federal statutes; greater statutory flexibility to allow the development of innovative, local management strategies; funding for watershed problem solving forums, planning activities and solutions; and greater emphasis on a geographic focus for resource management and problem solving. A "bottom-up" watershed approach provides forums to convene federal agencies, states, tribes, local governments and other stakeholders around a problem or set of problems. It also provides an incentive to citizens within the watershed to become involved in finding solutions and managing the resource.

The Structure

The proposed watershed approach would look like the following:

1. Using the current framework rather than a separate new program, authority should be provided to states under the CWA to undertake a holistic watershed approach to water quality control and to other watershed issues identified by states. Funding and technical assistance or incentives will be needed.

2. The governor of each state starts the process by conducting an assessment process which leads to the identification and prioritization of watersheds. The scale of the watersheds identified will vary depending upon the goals of the state. For example, the USGS delineates watersheds ranging from first order (a local watershed) to sixth order watersheds (major river drainages). Depending on the problem, the appropriate order watershed can be targeted, or watersheds can be aggregated to yield the appropriate scale. These can be reaggregated to address different problems.

Prioritization of watersheds would be based on *threats* from point and nonpoint source pollution problems, *opportunities* such as those to mitigate and/or restore wetlands and riparian areas, and *protection* of watersheds which are ecologically healthy.

3. States are then responsible for facilitating or enabling local problem solving. This bottom-up process must involve all key interests including agriculture, urban interests, industry, and environmentalists. Participation in watershed forums may vary depending upon the problem or goals being addressed.
4. After there is a firm commitment to a bottom-up system, it is critical that affected federal agencies work with state and local interests using a watershed focus. They may be asked to help with watershed plans, and should ultimately coordinate their activities around these local plans.
5. Federal money should be made available on a cost-share basis. Funding should be available to states, localities and motivated citizens within a watershed to begin addressing problems within a priority watershed. Federal incentives may be appropriate to engage all necessary parties, including other federal agencies. Federal technical assistance should also be available.

Federal Flexibility and State Responsibilities

Once states have identified and prioritized their watersheds and are committed to local problem solving processes, flexibility, with regard to meeting the goals of the CWA, should be provided to states. Flexibility is needed so that states can act in the face of uncertainty to protect their resources. A watershed approach can provide a framework for adaptive management so that states can readjust their efforts as they learn more about the resource and how it responds to past and present pollution control actions. Examples of areas in which states need greater flexibility include:

- encouragement and removal of constraints to bargaining and other creative solutions that can provide mechanisms for effective pollution control on a watershed basis. States may need extensive flexibility in designing cleanup and/or protection strategies. For example, this might include specific authority to allow point source dischargers to provide financial assistance to nonpoint source polluters to help reduce NPS loadings in exchange for offering relief from compliance deadlines in order to allow adequate time to demonstrate results. The purpose of this would be to produce more cost effective results watershed-wide. It may also involve some changes in permit conditions, or the creation of other incentives for polluters or other parties to participate or to fund efforts.
- removal of federal barriers to solutions. For example, there are liability obstacles to cleaning up abandoned mine drainage under Superfund.

- acceptance of abbreviated or less frequent reporting such as the total maximum daily load (TMDL) reviews and permitting reports. The rationale for this is that the current framework of reviews, reports, permit renewals are time consuming, resource intensive, and would be cumbersome and "out of sync" in the context of watershed programs because they run contrary to more comprehensive approaches. Allowing flexibility through abbreviated reports and extended deadlines would free up resources for watershed programs.

In exchange for the federal government removing barriers, providing greater flexibility, and providing funding and technical assistance, states will accept ecological restoration as a goal, adhere to watershed-specific timeframes for action, and become the accountable level of government. States will deal with TMDLs, develop monitoring programs, develop an integrated system for point and nonpoint source pollution control, and adopt EPA-approved basic criteria for watershed programs and evaluation of results. Broadly defined state standards should be the guide for assessing progress including performance measures or measurable standards related to the status of soils, water, and habitat.

Since each watershed solution may be unique, the development of contracts between states and the federal government may be an appropriate enabling tool for allowing individualized watershed approaches while ensuring accountability.

Principles

The federal government should:

- Work with the current institutional, management, technological and scientific framework.
- Encourage coordination and integration of existing programs at all levels of government.
- Work through states toward local solutions.
- Allow for any array of stakeholders to participate.
- Mandate goals, but allow states to develop the processes necessary to meet those goals.
- Facilitate targeting and priority setting through comparative risk assessment which includes not only health risks but ecological risks, and not only physical but social endpoints.
- Provide guidance to states to assist them with classifying their watersheds and determining overall goals.
- Work with states and localities to create watershed-relevant water quality standards.
- Insist upon compliance by all federal agencies with the CWA and the watershed plans developed under it.

The federal government should not:

- Mandate a new watershed approach or program.
- Hinder or inhibit current state-based initiatives and programs.

- Overemphasize planning at the expense of action and implementation.
- Unduly defer or delay improvements in water quality control of point sources.
- Violate the principle of state primacy over water resources. EPA should not be put in the business of allocating and reallocating water resources.
- Classify watersheds at the federal level.
- Develop a one-size-fits-all approach.

TESTIMONY OF MARLEN DOOLEY, ASSISTANT COMMISSIONER FOR ENFORCEMENT, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION AND ENERGY

Good afternoon. My name is Marlen Dooley. I am Assistant Commissioner for Enforcement for the New Jersey Department of Environmental Protection and Energy (DEPE). I thank you for this opportunity to participate in this hearing and present a state's perspective on enforcement of the Clean Water Act.

In 1990, the New Jersey State Legislature unanimously approved and Governor Florio signed into law the New Jersey "Clean Hater Enforcement Act" (CWEA). The CWEA has strengthened enforcement of the State's water pollution control and prevention program by substantially amending the Water Pollution Control Act to require that permits be taken seriously and to ensure that enforcement actions are adequate to effectively deter potential violators.

The enactment of CWEA was prompted by a rising frustration within the Legislature over lagging progress in improving surface water quality throughout the State. Additionally, there was concern regarding the DFPE's response to the nature and extent of violations of New Jersey Pollutant Discharge Elimination System (NJPDDES) permits. In particular, the DEPE's practice of compromising the amount of penalty assessments was being questioned. Frequently, the department would assess penalties for the maximum amount allowed by law, and then significantly compromise or reduce the actual penalty in exchange for written, legally binding commitments by the permittee to bring the facility into compliance within a specific Period of time. These compromises, as they were intended, usually resulted in a substantial investment of capital by the permittee towards improvements in its treatment processes. The practice of significantly compromising penalty assessments, however, contributed to the perception that penalty assessments, like effluent limitations, were so flexible that the regulated community was not taking them seriously.

Moreover, in addition to the rising concern over non-compliance and inadequate enforcement, the enactment of the CWEA was prompted by a recognition that municipal wastewater treatment plants or publicly owned treatment works (POTWs) lacked the necessary tools to effectively implement and enforce industrial pretreatment programs and that a greater local role was necessary to appreciably improve water quality.

The CWEA was designed to enhance the department's enforcement scheme in a number of ways. The Act attempts to identify the most egregious violators by establishing two special classes of offenders: those responsible for serious violations and those committing a series of violations to be known as "significant noncompliers".

To ensure that appropriate enforcement action is taken for serious offenses, the Act requires the assessment of mandatory minimum penalties of \$1,000 for each serious violation. These penalties may not be waived or compromised. Permittees determined to be "significant noncompliers" are subject to minimum penalties in the amount of \$5,000. The Act also limits the department's discretion to compromise penalties beyond 50% of the assessed amount. In addition, the Act requires the imposition of minimum penalties of \$100 per day per pollutant for each item omitted on a Discharge Monitoring Report (DMR). Further, as a means of bolstering compliance monitoring, the Act requires that all major facilities be inspected by the department at least annually, including the sampling and analysis of each discharge.

The Act empowers POTWs with more extensive monitoring and enforcement tools. It also requires the POTWs to conduct annual on-site inspections and sampling for each major industrial discharger into its treatment works.

Based upon New Jersey's experience implementing the CWEA during the past two years, the Act appears to have helped achieve greater compliance. Inspections conducted in 1992 resulted in 505 facilities being rated as "unacceptable", reflecting a sharp decrease from 1991 in which 792 facilities were rated as "unacceptable."

These demonstrated improvements in compliance may be attributed to the implementation of a fair, but firm enforcement philosophy adopted by the department in response to the Act.

The main objective of the Clean Water Enforcement Act is to improve water quality through greater compliance. While the assessment of penalties is effective as a deterrent tool, it is only a means to achieve the goal of compliance. Accordingly, the DEPE measures success based not upon the amount of fines assessed, but upon the diligence of our efforts to achieve compliance.

In accordance with this philosophy, the department initiated an extensive outreach program with the regulated community in advance of the CWEA's implementation date urging that Steps be taken to ensure compliance. Rather than wait for

the deadline and begin penalizing would-be violators, the department worked with the regulated community to resolve actual and potential compliance problems. As a result of this outreach effort, the department executed 84 Administrative Compliance Orders (AGO's) with permittees during the six months prior to the CWEA's effective date. It should also be noted that, in anticipation of the implementation of the enhanced enforcement scheme, the regulated community in New Jersey made changes on its own initiative to better meet the CWEA's requirements.

Further, the department adopted a uniform penalty policy, in accordance with the Act, establishing the exclusive criteria applied to determine the amount of a civil administrative penalty assessment. The adoption of this policy ensures consistency in our penalty assessments among similar violations accompanied by similar circumstances.

The department also established internal protocols to ensure that the specific facts of each violation are individually examined to ensure the proper application of the penalty criteria. This intensive fact-specific review of each violation results in civil administrative penalty assessments that are fair and legally sustainable. As a result of this new enforcement approach, the amount of civil administrative penalty assessments has markedly decreased from \$56.9 million in 1990 to \$23.7 million in 1991 to \$17.5 million in 1992.

The corollary to this new enforcement approach is that the department no longer offers significant reductions of the assessed penalty count during settlement negotiations. This approach follows the proscription of the CWEA which prohibits the department from compromising or reducing a penalty by more than 50 percent of the assessed amount (except for POTWs). Consequently, the regulated community is on notice that the penalty assessments are fair and rational, and the department is prepared to vigorously litigate a penalty assessment.

This no-nonsense enforcement approach appears to have sent a clear message to the regulated community that penalty assessments are fair, not arbitrary, reflecting all relevant factual and legal considerations known to the department, and are therefore, litigation worthy. The greater certainty now associated with penalty assessments appears to have better facilitated settlement negotiations as well as successful litigation when penalties are contested. The department's collection of penalties increased from \$5.9 million in 1990 to \$10.8 million in 1992.

The department firmly believes that compliance is enhanced by establishing precisely defined requirements and clearly articulating the way in which compliance is measured by the department. Accordingly, throughout 1991 and 1992 the department continued its outreach to the regulated community by working with permittees to develop better guidance explaining the specific steps necessary to comply with the sampling and reporting requirements of the Act.

In conclusion, our enforcement philosophy is fair but firm with compliance as the primary goal. The DEPE strongly supports any federal actions to reauthorize the Clean Water Act that incorporates the same philosophy and goal into the Act.

I am available to discuss specifics of the state's experiences with CWEA and enforcement of the Clean water Act at the federal level. Thank you.

**TESTIMONY OF EDWARD LLOYD, GENERAL COUNSEL, NEW JERSEY
PUBLIC INTEREST RESEARCH GROUP**

I.) INTRODUCTION

My name is Edward Lloyd. I am General Counsel to the New Jersey Public Interest Research Group (NJPIRG) and Director of the Rutgers Environmental Law Clinic. I am testifying today on behalf of NJPIRG and the US. Public Interest Research Group. NJPIRG is the state's largest non-profit, non-partisan environmental and consumer research and advocacy organization with over 70,000 members. U.S.PIRG is the national lobbying office for state PIRGs in over 30 states with over 1 million members nationwide.

For over two decades, State PIRGs have fought to clean our waterways. PIRGs have played a key role in helping to pass pollution prevention and toxics use reduction laws in Massachusetts, New Jersey, Vermont and Oregon. NJPIRG has filed over 60 Clean Water citizen suits and helped to pass the country's strongest Clean Water enforcement law in New Jersey.

We urge Congress to bring some of these lessons learned at the state level up to the national level and incorporate them into the federal Clean Water Act. We support legislation introduced by Representative Frank Pallone, the Clean Water Enforcement and Compliance Improvements Act of 1993 (H.R.2727), and are working with Senator Frank Lautenberg to introduce similar legislation in the Senate.

II.) STRENGTHENING ENFORCEMENT OF THE CLEAN WATER ACT

A.) THE PROBLEM: CLEAN WATER ENFORCEMENT IS "WEAK AND SPORADIC"

Strong enforcement of the Clean Water Act is fundamental to the success of the program. Unfortunately, studies conducted by the General Accounting Office, the Inspector General's office, states and environmental groups demonstrate that discharge violations are routinely ignored even for serious and chronic violators. In addition, economic benefits are often not taken into consideration when penalties for violations are determined.

This lax enforcement of the Clean Water Act greatly reduces incentives to comply with the law. Richard Hembra, Director of Environmental Protection Issues at the U.S. General Accounting Office (GAO), testified before the House Subcommittee on Water Resources of the Public Works Committee during the 102nd Congress. In describing GAO's findings regarding enforcement of the Clean Water Act, Mr. Hembra said the following:

"Our work . . . clearly indicates that enforcement of our Nation's water quality laws continues to be weak and sporadic. Despite serious and longstanding violations, most enforcement actions are informal slaps on the wrist rather than formal actions, such as administrative fines and penalties. Further, even in the relatively few cases where penalties have been assessed, they are often significantly reduced or dropped without adequate documentation." (May 14, 1991)

Mr. Hembra concluded by stating:

"the ability of our Nation's environmental laws to protect health and the environment depends greatly on effective enforcement programs. Without enforcement, dischargers have little incentive to incur the cost of pollution control. At the same time industrial discharges that do abide by program requirements are unfairly placed at a competitive disadvantage with those who choose not to invest in pollution control equipment and practices."

John Martin, Inspector General (IG) of the U.S. Environmental Protection Agency testified before the Senate Environmental Protection Subcommittee of the Environment and Public Works Committee 102nd Congress (July 18, 1991) on enforcement under the Clean Water Act. The Inspector General's office conducted a series of audits to examine the effectiveness of the NPDES permit enforcement program and "concluded that enforcement actions taken by the EPA and the States were frequently ineffective in returning major municipal and industrial violators to compliance." Some of the examples of serious and chronic violators from the IG's audit are startling:

". . . a wood preserving operation in Virginia had a history of environmental problems that caused surface and groundwater contamination. Although five enforcement orders were issued for violations of its NPDES permits, not one penalty was assessed in 13 years of operation. Eventually, this facility was listed as a Superfund site, but it was not until two years later that its discharge permit was finally revoked."

". . . a municipality paid only \$7,800 for numerous NPDES permit violations over several years. This included \$3,200 for two instances in which more than 1600 fish are killed because of the violations. For exceeding a discharge limitation, this municipality was fined \$1,000; we estimated the penalty could have been \$390,000."

This is not to say that the maximum penalty is always in order, but that the penalty must reflect the severity of the violation and create an incentive to comply with the law. The IG's audits found that in 46 of the 69 NPDES cases evaluated, the penalty assessments were not sufficient to recover the economic benefit gained by noncompliance. The Inspector General concluded that "[w]hen penalties are reduced to below what it would cost to comply with the environmental laws, they encourage rather than deter noncompliance. Small fines and lengthy time limits to achieve compliance promote a pay-to-pollute mentality."

The Clean Water Act enforcement program should be strengthened to create greater incentives to comply with the law by setting mandatory minimum penalties for serious and chronic violators, prohibiting profits from polluting, strengthening the reporting and inspection requirements, and strengthening the citizen suit provisions in the law.

B.) TOUGHER ENFORCEMENT IS WORKING IN NEW JERSEY

In May 1990 Governor Jim Florio signed into law the New Jersey Clean Water Enforcement Act. We believe that this law provides a model for improved enforcement of the federal Clean Water Act and are working with Senator Frank Lautenberg and Representative Frank Pallone (both D-NJ) to introduce legislation modeled on the New Jersey law.

The New Jersey Clean Water Enforcement Act requires—

- The New Jersey Department of Environmental Protection and Energy (NJDEPE) to increase inspections at permitted facilities and assess mandatory minimum penalties for certain violations; and
- Permittees to submit monthly discharge monitoring reports.

Just last month, the NJDEPE released their "Second Annual Report of the Clean Water Enforcement Act." The Executive Summary of this report is attached at Appendix I of this testimony. The NJDEPE report found the following:

Inspections of facilities show that more facilities are attaining compliance. The number of facilities which inspections found "unacceptable" decreased from 792 in 1991 to 505 in 1992.

The average penalty assessed in each formal enforcement action has decreased. Because the Act requires the NJDEPE to conduct more frequent inspections of facilities operated by "significant noncompliers," the agency finds violations more quickly and takes timely action. This results in reduced average penalties. Compliance with the self-reporting requirements is improving. The number of violations for failure to submit discharge monitoring reports (DMR) decreased from 59 in the last six months of 1991 to 38 for all of 1992.

C.) THE SOLUTIONS

Enforcement of the Clean Water Act should be strengthened to improve government accountability and remove current obstacles to citizen suits.

- 1.) IMPROVE GOVERNMENT ACCOUNTABILITY
 - a) SET MANDATORY MINIMUM PENALTIES

Noncompliance must be addressed quickly rather than waiting for patterns of chronic violation to develop. Uniform minimum responses to violations by regulators will decrease average penalties assessed and bring violators into compliance more rapidly. Uniform minimum penalties which do not favor some discharge methods over others also reduces incentives to shift discharges from surface or ground water or sewage treatment facilities, for example.

To address the issue of chronic significant violations of the Clean Water Act we recommend that state programs be required to establish mandatory minimum penalties for "serious violations" of and for "significant noncompliance" with the Act based on the current U.S. EPA definition.

Congress should amend the Clean Water Act to require that a mandatory minimum penalty of \$1,000 per violation be assessed for "serious violations" which includes—

- (1) discharge violations of a hazardous substance that is 20% or more over the permitted limit or
- (2) discharge violations of a pollutant (other than a hazardous substance) that is at least 40% over the permitted limit.

In addition, the Clean Water Act should be amended to require that any facility determined to be in "significant noncompliance" be assessed a mandatory minimum penalty of \$5,000 per day per violation. We recommend that the definition of "significant noncompliance" be based on EPA's current criteria¹ and would apply if any of the following occur:

- 1) Two serious violations of any pollutant during any 6-month period;
- 2) Four exceedances of a monthly average limit for any pollutant, by any amount, in any 6-month period; or
- 3) Two instances of failure to submit Discharge Monitoring Reporting within any 6-month period.

¹ The criteria used by EPA to define "significant noncompliance" are: 1) two exceedances of a monthly average limit in any 6-month period that meet the following criteria: 40% over limit for conventional pollutants and nontoxic metals, 20% over limit for toxic pollutants; or 2) four exceedances of a monthly average limit in any amount in any 6-month period.

b.) PROHIBIT PROFITS FROM POLLUTING

The existing Clean Water Act allows "economic benefits" to be taken into consideration in assessing penalties. Unfortunately, this authority is greatly underutilized. In June 1991, the GAO released findings from their review of the use of economic benefits in penalty assessments which found that "in nearly two out of three penalty cases concluded in fiscal year 1990 in EPAs air, water, hazardous waste, and toxic substances programs, there was no evidence that economic benefits had been calculated or assessed."²

To recoup economic benefits and create disincentives to violate the law, we recommend that the Clean Water Act be amended as follows:

- i) Amend section 309 by adding the following at the end the section:

"(h) GENERAL RULE.—Notwithstanding any other provision of this section, any civil penalty assessed and collected under this section must be in an amount which is not less than the amount of the economic benefit (if any) resulting from the violation for which the penalty is assessed"

- ii) Amend section 309 to require the Administrator to issue regulations establishing a methodology for calculating the economic benefits or savings resulting from violations of the Act. Pending issuance of these regulations, economic benefits shall be calculated on a case-by-case basis.

- iii) Amend section 309 as follows to limit compromises of civil penalties:

"Notwithstanding any other provision of this section, the amount of a civil penalty assessed under this section may not be compromised below the amount determined by adding the minimum amount required for recovery of economic benefit under subsection (h), to 50 percent of the difference between the amount of the civil penalty assessed and such minimum amount."

c.) IMPROVE DISCHARGE REPORTING AND INSPECTIONS

Access to accurate and consistent reporting is fundamental to the success of the Clean Water Act's permitting and enforcement programs. Without accurate monitoring and reporting of discharges, protection of waterways is impossible.

Currently, there are great discrepancies between the National Pollutant Discharge Elimination System (NPDES) for direct dischargers to surface waters and the National Pretreatment Program requirements for industrial users of publicly owned sewage treatment plants (POTWs). Monitoring and reporting requirements are often less stringent for indirect discharges to POTWs. This creates incentives to discharge to POTWs to avoid reporting and monitoring. In addition, public access to both types of reporting is poor.

NPDES permit holders file their monitoring reports with the states. Filing of these reports occurs months after they are submitted, and are filed in district offices rather than in one central location. Indirect dischargers to POTWs generally file monitoring reports with the relevant municipality, and the data is not compiled in a national computerized database.

The lack of adequate information on discharges remains a problem for regulators and citizens. All dischargers to surface waters, ground waters, and publicly owned treatment works should be required to increase frequency of data reporting. This would serve to increase timeliness of the data and prevent violators from masking the severity of their violations through averaging of data points over long periods of time.

To improve access to discharge reporting, Congress should amend the Clean Water Act to require—

- (1) all "major" facilities discharging to ground waters, surface waters or treatment works facilities to submit discharge monitoring reports (DMRs) on a monthly basis; Any other permit holder, should submit DMRs on at least a quarterly basis;
- (2) DMRs be signed by the highest ranking official at the plant with day to day operational responsibilities;
- (3) all Significant Industrial Users (SIUs) of POTWs should be required to file DMRs monthly with the treatment works, states and with EPA regional offices. In addition, states should be required to input this data into the EPA Permit Compliance System; and

² Environmental Enforcement: Penalties May Not Recover Economic Benefits Gained by Violators, GAO/RCED-91-166, June 1991.

(4) EPA to make compliance data on EPA's computerized Permit Compliance System available to the public by computer telecommunication, similar to the existing citizen access to Toxics Release Inventory data under the Emergency Planning and Community Right to Know Act.

Inspections of permitted facilities tend to be superficial "walk throughs" that do not require independent sampling to verify the accuracy of discharge data submitted by the permittee. In some instances, facilities receiving permits for the first time are not even inspected before the permit becomes effective. The reliance of the Clean Water Act on self-reported information makes verification and important component of successful implementation.

Congress should amend the Clean Water Act to require that—

(1) Major industrial or municipal facilities be inspected once a year and that the inspection should, at a minimum, include a review of housekeeping measures, sampling techniques, maintenance records and independent sampling of the permittee's effluent;

(2) If a facility is in "significant noncompliance" with the Act or is renewing a permit, an inspection should be conducted within 6 months of the facility becoming in significant noncompliance with the Act or renewing a permit; and

(3) If a facility is being permitted for the first time, an inspection should be conducted prior to the effective date of the permit.

New Jersey has implemented an improved inspection program and has credited it with helping to bring compliance up and average penalties down because the most serious violations are caught earlier.

d.) LIMIT ISSUANCE OF PERMITS TO "BAD ACTORS"

"Significant noncompliers," as defined in the discussion on mandatory minimum penalties, should be considered "bad actors" under the Clean Water Act and as such, Congress should prohibit issuance of new permits to any person who has been identified as a "significant noncomplier" until the Administrator or the States in which the violations occur determine that the conditions giving rise to such violations have been corrected.

2.) REMOVE CURRENT OBSTACLES TO CITIZEN SUITS

Citizen suits are a tried and true method of bringing polluters into compliance with the Clean Water Act. The 1972 Clean Water Act included authority for citizens to sue polluters, thereby, recognizing that the U.S. EPA and states might be unable or unwilling to aggressively pursue all violators.

In 1985, Congress again recognized the importance of citizen suits.

"Citizen suits are a proven enforcement tool. They operate as Congress intended to both spur and supplement to government enforcement actions. They have deterred violators and achieved significant compliance gains." [Senate Report No. 50, 99th Cong., 1st Sess. 28 (1985)]

The U.S. Department of Justice's Statistical Report for Fiscal Year 1992 acknowledges the "dedication, hard work and effort put forth by the private citizen groups and others who sue non-government polluters for violating the nation's environmental laws." The report goes on to say—

These groups perform a valuable public service by joining the Federal Government in seeking compliance with a host of environmental statutes particularly the Clean water Act. Over the past 4 fiscal years, they have collectively recovered for the United States Treasury over \$9 million in penalties and interest.

Over 60 percent of the penalties were recovered from NJPIRG initiated suits. The penalties recovered are listed Table I.

While the existing citizen suit provisions have allowed significant enforcement activity, they contain a number of obstacles to citizen enforcement that should be removed.

a.) CITIZENS SHOULD BE ABLE TO SUE FOR PAST VIOLATIONS

A 1987 Supreme Court case, *Chesapeake Bay Foundation v. Gwaltney of Smithfield, Ltd.*, 484 U.S. 49 (1987), seriously weakened the deterrent effect of civil actions.

Section 505(a)(1) of the Clean Water Act provides that any citizen may commence a civil action against any person "alleged to be in violation of the Act. The Supreme Court, in *Gwaltney*, interpreted those words to mean that citizens cannot sue for "wholly past" violations, i.e., a case in which all violations occur before the com-

plaint is filed and citizens can not allege in good faith that violations may be continuing.

The result of *Gwaltney* is that companies have an incentive to delay compliance until citizens notify them of intent to sue. The company then has 60 days to get itself into compliance and avoid all penalties and keep any economic benefit from the violation. This greatly undermines the deterrent effect of citizen suits.

The Congress amended the Clean Air Act in 1990 to allow citizens to commence action against any person "who is alleged to have violated (if there is evidence that the alleged violation has been repeated) or to be in violation" of the Act.³

Members of the Senate and Environment and Public Works Committee strongly supported this amendment to the Clean Air Act as the following comments demonstrate:

"The outcome [in *Gwaltney*] is inappropriate because it provides no penalty to sources that have violated the act in the past." [Senate Majority Leader Mitchell, 136 Cong. Rec. S3239]

"There is no justification for allowing polluters to enjoy the unjust enrichment gained by failing to comply in the past even if they comply in the present." [Senator Baucus, *id.* at S3237]

"Citizens should have authority to sue for wholly past violations." [Senator Lieberman, *id.* at S3174]

Under *Gwaltney*, "[t]here is no penalty for being caught . . . The *Gwaltney* problem can be fixed. It is not a defect in every environmental statute." (Senator Durenberger, *id.* at S3183)

We urge Congress to make similar amendments to the Clean Water Act. The Clean Water Enforcement Act would amend the Clean Water Act to allow citizens to sue for past violations and remedy the effects of *Gwaltney*. [See section III below for comments on the *Gwaltney* fix contained in S. 1114]

b.) DEFINITION OF CITIZEN STANDING SHOULD BE CLARIFIED

The definition of "citizen standing" determines who has the authority to sue violators. Congress intended to confer to citizens standing to the limits of the Constitution. Section 505(g) of the Clean Water Act provides that the "term 'citizen' means a person or persons having an interest which is or may be adversely affected."

The court in *PIRG v. Powell Duffryn Terminals* [913 F.2d 64 (3rd Cir. 1990), Cert. denied, 111S.Ct 1018(1991)] held that plaintiffs must show that defendants discharged a pollutant which "causes or contributes to the kinds of injuries alleged by the plaintiffs." [931 F.2d at 72-73] This standard not only places an improper burden on plaintiffs to demonstrate harm to water quality but is also contrary to both congressional intent and Supreme Court decisions.

The Congress decided in 1972 that government regulators "need not search for a precise link between pollution and water quality." [S.Rep.No. 414, 92nd Cong., 1st Sess. 7 (1971)] Congress determined that all pollution is harmful, no one has a right to pollute and pollution is temporarily permissible only because of technological limitations. Citizens should not have to meet a test for standing that is more stringent than the test for holding polluters liable for permit violations.

The Supreme Court held in *Valley Forge Christian College v. Americans United for Separation of Church and State* [454 U.S.464, 472(1982)] that, under Article III of the Constitution, a plaintiff must show (1) injury in fact (2) which is fairly traceable to defendant's illegal conduct and (3) which is likely to be redressed by a favorable decision. Courts have found that the "injury in fact" requirement has been met by evidence that persons use the water downstream from the defendant's discharge, or would use the water if it were not polluted. In addition, courts have held that the "fairly traceable" requirement does not mean that plaintiffs must show to a scientific certainty that defendant's pollution caused plaintiff's injuries.

To clarify Congressional intent, Congress should add the following "finding" to the statute:

Congress finds that a discharge which results in a violation of this Act or a regulation, standard, limitation, requirement, or order issued pursuant to this Act interferes with the restoration and maintenance of the chemical, physical, and biological integrity of the water system into which the discharge flows (either directly or through a publicly owned treatment works), including any waters into which the receiving waters flow, and, therefore, harms those who use or enjoy such waters and those who use or enjoy nearby lands or aquatic resources associated with those waters.

³ 1990 Clean Air Act Amendments, section 304(a).

In addition, Congress should amend the definition of "citizen" in Section 505(g) of the Clean Water Act by adding the following language:

a person or persons having an interest (including a recreational, aesthetic, environmental, health, or economic interest) which is or may be adversely affected and includes a person who uses or enjoys the waters into which the discharge flows (either directly or through a publicly owned treatment works), who uses or enjoys aquatic resources or nearby lands associated with the waters, or who would use or enjoy the waters, aquatic resources, or nearby lands if they were less polluted."

c. COURTS SHOULD HAVE GREATER FLEXIBILITY IN DETERMINING THE DISPOSITION OF PENALTIES AND SETTLEMENT FUNDS

The Department of Justice has objected to numerous settlements on the ground that payments have been made to environmental projects rather than the U.S. Treasury. Congress intended there to be greater flexibility in determining the disposition of penalties and settlement funds. The conference report on the 1987 amendments to the Act states that these mitigation projects "preserve the punitive nature of enforcement actions while putting the funds collected to use on behalf of environmental protection." [H. Rep. No. 1004, 99th Cong., 2nd Sess. 139 (1986)]

The Clean Water Act should be amended to clarify the intent of Congress. The following language should be added to Section 309(d) and 505(a): "The court may, in the court's discretion, order that a civil penalty be used for carrying out mitigation projects which are consistent with this Act and which enhance the public health or the environment."

3.) INCREASE CITIZEN'S RIGHT-TO-KNOW THROUGH WATER POSTINGS

Citizens have a right to know when significant threats to their health or environment are present in their communities. The public should have access to information regarding the discharge of toxins and other pollutants into the waterways in which they swim and fish. One-third of the nation's remaining productive shellfish waters are closed on any given day because of pollution.⁴ In addition, in 1991, U.S. ocean and bay beaches were closed or advisories issued against swimming on more than 2,000 occasions in the coastal states that monitor beach water quality. High levels of bacteria—primarily from raw human sewage—are responsible for the overwhelming majority of these closures and advisories.⁵

Despite these facts, there are no federal requirements that the public be notified when water quality standards are violated. Nor are there uniform requirements for determining the nature and extent of fish and shellfish bans, advisories and consumption restrictions. Congress should amend the Clean Water Act to—

- (1) Require public postings at waterways that do not meet applicable water quality standards or are subject to a fishing or shellfish ban, advisory or consumption restriction;
- (2) Require NDPEs permit holders to maintain clearly visible signs indicating that the facility discharges into waterways and other information helpful for gaining greater information regarding those discharges, including the permit number and location of the permit;
- (3) Require POTWs to include, in customers' quarterly bills, information regarding their permit including a list of their violations over the preceding 12-month period; and
- (4) Require the EPA to develop uniform standards for posting bodies of water and requirements for determining fishing and shellfish advisories.

III.) COMMENTS ON ENFORCEMENT RELATED SECTIONS OF THE WATER POLLUTION PREVENTION AND CONTROL ACT OF 1993 (S. 1114)

This testimony comments on provisions contained in S. 1114 related to enforcement, including provisions contained in Title V (Permit Program and Enforcement), section 2 (Findings and Purpose), and Sections 201, 204 and 503 (provisions related to pretreatment).

⁴ *Stemming the Tide: Conservation of Coastal Fish Habitat in the United States*, summary of a National Symposium on Coastal Fish Habitat Conservation, Baltimore Maryland (March 7-9, 1991).

⁵ *Testing the Waters: A National Perspective on Beach Closings*, NRDC, Kailen Mooney and Ashley McLain, July 1992.

It also addresses a number of issues that we believe are critical to improving enforcement under the Clean Water Act but that are missing from S. 1114. These issues are discussed in detail above.

A.) TITLE V of S. 1114—ENFORCEMENT

1. PAST VIOLATIONS—We support a modified version of section 503(a) of S. 1114.

Section 503(a) would effectively overrule *Gwaltney of Smithfield Ltd. v. Chesapeake Bay Foundation*, 484 U.S. 49 (1987), by allowing citizens to sue for wholly past violations “if there is evidence that the alleged violation has been repeated.” the bill correctly recognizes that the *Gwaltney* decision is bad enforcement policy because it allows polluters to escape accountability for their actions and undermines the deterrent effect of civil penalties. The requirement for repeated violations contained in S. 1114 parallels the change in the 1990 Clean Air Act amendments.

The requirement that violations be repeated correctly recognizes that a single, isolated, past violation is not likely to warrant enforcement action. However, such suits will rarely, if ever be brought. When isolated violations are involved, the permittee may invoke EPAs “upset” defense as a defense to liability. 40 CFR 122.41(n). Even if liability is established, the courts are not likely to impose significant penalties since, under section 309(d) of the Act, they must consider the history and seriousness of the violations in setting a penalty.

On the other hand, the “repeated violations” requirement contained in S. 1114 is likely to be raised as a defense by defendants in many cases with multiple violations simply because it blurs the bright line of liability and provides an opportunity for delaying tactics. For example, defendants are likely to argue that repeated violations must be established on a pollutant by pollutant basis and that a violation is only enforceable when no corrective action is taken to prevent the specific cause of that particular violation. It would therefore increase the cost and complexity of citizen enforcement in the same way that the *Gwaltney* decision has led to costly and complex litigation over whether violations are continuing. For these reasons, we recommend that the requirement that the violations be repeated be deleted from S. 1114, as in section 10(a) of the Pallone “Clean Water Enforcement Act” (H.R. 2727).

2. USE OF PENALTIES FOR BENEFICIAL PROJECTS—We support section 503(b)(1) of S. 1114.

Section 503(b)(1) of S. 1114 would clarify existing law by specifically authorizing courts to order that civil penalties be used for beneficial projects that enhance public health or the environment. This change reaffirms the statement in the conference report on the 1987 amendments to the Act that such projects “preserve the punitive nature of enforcement actions while putting the funds collected to use on behalf of environmental protection.” H. Rep. No. 1004, 99th Cong., 2d Sess, 139 (1986).

3. RESTORATION OF DAMAGED NATURAL RESOURCES—We support section 503(b)(2) of S. 1114.

Section 503(b)(3) properly expands the scope of injunctive relief in government and citizen suits to permit courts to order polluters to restore natural resources damaged as a result of their violations of the Act.

4. OFFSETTING PENALTIES—We support a modified version of section 503(b)(5) of S. 1114.

Section 503(b)(5) of S. 1114 properly amends Section 309(d) of the Act to provide that the court may offset penalties imposed in prior government actions involving the same violation. This change is necessary to allow citizen suits to proceed when EPA or states do not act within the 60-day notice period and file their suit after citizens do but settle their suit first. Two circuit courts have held that, in these circumstances, citizens cannot continue their action for the same violation even though they sued first. *Work v. Tyson Foods, Inc.*, 921F.2d 1394, 1404 (8th Cir. 1990), cert denied, 112 S.Ct. 414 (1991); *ASLF v. Eastman Kodak Co.*, 933 F.2d 124,127 (2d Cir. 1991). *Contra NRDC v. Loeuengart & Co., Inc.* 776 F. Supp. 996,1000 (M.D. Pa. 1991); *PIRG v. Elf Atochem North America, Inc.*, 817 F.Supp. 1164, 1171-1172 (D.NJ. 1993).

Section 503(b)(5) of S. 1114 appears to be intended to clarify that citizens are not precluded from seeking additional, nonduplicative relief in their action after a later-filed government action is concluded. However, to make this principle effective, it should be stated not only in the penalty provision (Section 309(d) of the existing Act) but also in the jurisdictional section (Section 505(b) of the existing Act). S. 1114

should therefore be amended to add the language in Section 10 of the Pallone "Clean Water Enforcement Act" (H.R. 2727).

5. FEDERAL FACILITIES ENFORCEMENT—We strongly support Section 503(c) of S. 1114.

This section of S. 1114 grants the EPA, States and citizens the authority to sue federal facilities to enforce the Clean Water Act. Congress made a similar amendment to the Resource Conservation and Recovery Act during the 102nd Congress. Similar legislation has been introduced in the House of Representatives by Reps. Peter DeFazio and Dan Schaefer. One significant difference, is that the House bill considers radionuclides pollutants that would be regulated. We urge the Senate to include similar language.

6. STATE ADMINISTRATIVE ENFORCEMENT—We support Section 503(e)(2) of S. 1114.

Section 503(e)(2) of S. 1114 would delete the existing subparagraphs of section 309(g)(6) of the current Act under which certain state administrative penalty actions can preclude EPA and citizen enforcement. This is an important and needed change. As EPA has explained in its workgroup report under section 314(b) of the 1987 amendments to the Act, courts in recent years have construed the preclusion provisions so broadly that almost any state administrative action, no matter how inadequate, has preclusive effect. As a result, Section 309(g)(6) and the Gwaltney decision have become the two most troublesome obstacles to citizen enforcement. This change conforms to that proposed in section 5(g) of the Pallone "Clean Water Enforcement Act" (H.R. 2727).

By making this change, it is unnecessary to make the technical amendment set forth in section 503(b)(5)(B) of S. 1114. This technical amendment assumes that state administrative penalty actions will continue to have preclusive effect, and would merely ensure that state actions have no greater preclusive effect than EPA administrative penalty actions.

7. RECOVERY OF ECONOMIC BENEFIT—We support a significantly modified version of Section 503(b)(6) of S. 1114.

Section 503(b)(6) of S. 1114 would authorize EPA to sue violators which have paid state penalties that do not recover the violators' economic benefit. Section 503(b)(7) of S. 1114 would authorize EPA to withhold funds to states which do not have adequate authority to impose administrative civil penalties against violators. While these provisions improve existing law, they do not go far enough.

First, section 503(b)(6) should authorize citizens, as well as EPA, to sue when state penalties do not recover economic benefits. Second, section 503(b)(7) assumes that the problem with state administrative enforcement is lack of authority, while GAO and EPA IG reports show that the real problem is lack of will to enforce the Act effectively. To address the latter problem, S. 1114 should be amended to contain the language in section 5 (h) and (i) of the Pallone "Clean Water Enforcement Act" (H.R. 2727), which require states to assess and collect penalties which, at a minimum, recover economic benefit. In addition, those bills require EPA to issue regulations which establish a uniform methodology for calculating economic benefits.

8. SINGLE OPERATIONAL UPSET DEFENSE—We support Section 503(e)(3) of S.1114.

Section 503(e)(3) properly deletes the single operational upset defense. This defense was added in 1987 because Congress apparently wanted to limit penalties when there are multiple simultaneous violations from a single "upset" event. However, the single operational upset provision contained in S. 1114 is ambiguous and difficult to apply. The court is already required to consider the seriousness of the violations in assessing penalties [33 U.S.C. 1319(d)]. S. 1114 therefore properly repeals the single operational upset provisions in Section 309(c)(5), (d) and (g) of the existing law. This conforms with section 5(b) of the Pallone "Clean Water Enforcement Act" (H.R. 2727).

9. JUDICIAL REVIEW OF STATE-ISSUED PERMITS

Section 501(d) correctly provides that states must provide an opportunity for citizens to obtain judicial review of state-issued permits. This amendment is necessary to counteract a decision by the Virginia courts that only the permittee has standing to seek judicial review of its permit. This change corresponds to that in section 6(b) of the Pallone "Clean Water Enforcement Act" (H.R. 2727).

B. SECTION 2 OF S. 1114—FINDINGS

Paragraphs (a)(2) and (a)(9) of this section contain several findings that discharges of pollutants are harming human health and the environment and that the authority of the government and citizens to enforce the Act need to be strengthened. These findings are helpful and appropriate.

However, the connection between the existence of environmental harm and the right of citizens to bring enforcement actions should be stated more clearly. Courts have suggested that citizens must show that illegal discharges cause measurable harm to downstream waters. *NRDC v. Watkins*, 954 F.2d974, 980-981 (4th Cir. 1992). However, Congress decided in 1972 that, in setting effluent limits, EPA "need not search for a precise link between pollution and water quality." Senate Report No. 414, 92d Cong., 1st Sess. 8 (1971). Citizens should not have to meet a standard of harm for standing which is more stringent than that for liability.

Congress has the power to define what type of harm confers standing to sue. As Justice Kennedy stated in *Lujan v. Defenders of Wildlife*, 112 S. Ct. 2130, 2146-2147 (1992), "Congress has the power to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before, and I do not read the Court's opinion to suggest a contrary view."

Congress should make a finding that any pollution which is discharged in violation of the Act harms users of the waters related to that violation. This will reduce the potential for protracted disputes over the standing of citizens to hold polluters liable for their violations. S. 1114 should be amended to add the findings in Section 2(b) and the definition of citizen standing in section 10(g) in the Pallone "Clean Water Enforcement Act" (H.R. 2727).

C. PRETREATMENT provisions in S. 1114.

S. 1114 takes a number of positive steps forward in the area of enforcement of pretreatment programs. However, these improvements alone do not go far enough in correcting deficiencies in current pretreatment programs.

First, they do not require EPA and States to issue permits for all significant industrial users (SIUs). Second, they do not require indirect dischargers to monitor and report their discharges more frequently to determine whether they are in compliance. Without these changes, it will be difficult for citizens and WPA to monitor and enforce compliance with pretreatment programs. We recommend that S. 1114 be amended to add language from sections 6 (d) and (e) of the Pallone "Clean water Enforcement Act" (H.R. 2727).

Third, S. 1114 section 503(b)(3)(A) does not authorize citizens to enforce local limits established by POTWs. The addition of the words "pretreatment requirement" alone could be read to exclude local limits, because section 503(b)(3) contains an expansion of EPA and State authority which distinguishes between requirements of pretreatment programs and local limits. To address this problem, section 503(b)(3)(A) should be changed to either (1) define pretreatment requirement to include local limit or (2) add the words "local limit" after "pretreatment requirement." Section 3 and 10 of the Pallone "Clean Water Enforcement Act" (H.R. 2727) offer a similar method for fixing this problem.

Fourth, S. 1114 does not take the additional necessary step of declaring that a violation of a pretreatment requirement, including local limits and monitoring and reporting requirements, is a violation of federal law. Section 3 of the Pallone "Clean Water Enforcement Act" (H.R. 2727) would correct this problem by revising section 307(d) of the existing law to make it unlawful to violate pretreatment standards, requirements, and local limits.

On the positive side, section 201(c) of S. 1114 strengthens pretreatment programs by requiring pretreatment standards for indirect dischargers be no less stringent than the effluent standards for direct dischargers. This will discourage the current practice where direct dischargers faced with enforcement actions have tied in to POTWs to obtain less stringent control requirements. We support this provision.

Section 204(a) of S. 1114 authorizes EPA and the States to issue permits to indirect dischargers which are not subject to a pretreatment program. It will thereby increase the universe of dischargers subject to regulatory control and enforcement, and we support this provision.

Section 503(b)(3) of S. 1114 authorizes citizens to enforce "pretreatment requirements" as well as pretreatment standards. This will allow citizens to enforce monitoring and reporting requirements against indirect as well as (under current law) direct dischargers. We support this provision.

D. PROVISIONS MISSING FROM S. 1114

1. MANDATORY MINIMUM PENALTIES

As discussed above, we believe that mandatory minimum penalties for "serious violations" and for "significant noncompliance" will bring the most serious violators into compliance more quickly, strengthen the deterrent effect of the law, and ensure that states that take tough action against violators of the Act are not penalized by creating a more level "playing field."

These provisions are contained in the Pallone "Clean Water Enforcement Act" (H.R. 2727) and language from these bills should be added to S. 1114.

2. RIGHT TO KNOW ABOUT TOXICS IN WATERWAYS

As discussed above, we urge the Senate to include provisions in their Clean Water Act amendments which will inform the public about toxics and other hazardous materials in waterways and establish a national program for testing and posting waterways.

We urge the Subcommittee to adopt the language contained in the Pallone Clean Water Enforcement Act.

3. IMPROVED DISCHARGE REPORTING AND INSPECTIONS

As noted above, access to accurate and consistent reporting is fundamental to the success of the Clean Water Act's permitting and enforcement programs. Both the Pallone and Lautenberg bills contain expanded reporting and inspection programs. However, the Pallone bill provides greater direction to the EPA on how often the inspections must occur and what must be included in the inspections. We urge the Subcommittee to adopt the Pallone version of this provision.

4. PUBLIC ACCESS TO COMPLIANCE DATA

We support language contained in S. 1081 introduced by Senators Baucus and Chafee during the 102d Congress.

The Baucus-Chafee bill introduced in the last session of Congress (section 13(g) of 1081, 102d Cong., 2d Sess.) provided that compliance data on EPA's computerized Permit Compliance System would be made available to the public by computer telecommunication, similar to the existing citizen access to the Toxics Release Inventory data under the Emergency Planning and Community Right to Know Act. It would have also required EPA Regional Offices to publish lists of significant violators in local newspapers on a quarterly basis. As Senator Chafee noted in his comments on that bill, "this provision is based on the idea that citizens have a right to know when significant threats to their health or environment are present in their communities."

These provisions would significantly improve existing law concerning public access to compliance information. However, they are absent from S. 1114. They should be restored, as in the form set forth in section 4(b) of the Pallone "Clean water Enforcement Act" (H.R. 2727).

CITIZEN ENFORCEMENT SUITS

The Division gratefully acknowledges the dedication, hard work and effort put forth by the private citizen groups and others who sue non-government polluters for violating the nation's environmental laws. These groups perform a valuable public service by joining the Federal Government in seeking compliance with a host of environmental statutes, particularly the Clean Water Act. Over the past 4 fiscal years, they have collectively recovered for the United States Treasury over \$9 million in penalties and interest. These groups are recognized below with our thanks and appreciation.

Table I—from the U.S. Department of Justice Statistical Report FY 1992.

Public Interest Research Group of New Jersey	\$5,915,161.97
Sierra Club Legal Defense Fund	1,184,214.00
Atlantic States Legal Foundation	1,039,133.25
Natural Resources Defense Council (NRDC)	645,500.00
Chesapeake Bay Foundation	299,822.00
Public Interest Research Group of Massachusetts	122,650.00
Public Interest Research Group of Ohio	100,000.00
State of Missouri	100,000.00
Westchester Fish, Game & Wildlife Association	60,000.00
Friends of the Earth	27,013.70
Hudson River Fishermen's Association	25,000.00
Public Interest Research Group of Illinois State	25,000.00
Save the Bay (Rhode Island)	22,450.00
Pennsylvania Environmental Defense Foundation	20,000.00
Ohio Environmental Council	15,000.00
Connecticut Fund for the Environment	10,000.00
Village of Kildeer	10,000.00
Braxton Citizens for a Better Environment	8,000.00
Arkansas Wildlife Federation	5,000.00
State Line Fishing & Hunting Club	5,000.00
Tennessee Environmental Council	5,000.00
National Environmental Foundation	2,000.00
American Littoral Society	1,000.00
City of New York	1,000.00
State of Rhode Island	1,000.00
TOTAL:	\$9,648,944.92

APPENDIX I

SECOND ANNUAL REPORT OF THE CLEAN WATER ENFORCEMENT ACT

PURSUANT TO NJSA 58:10A-14.1

EXECUTIVE SUMMARY

New Jersey's Water Pollution Control Act ("WPCA") is intended to restore, enhance and maintain the integrity of New Jersey's waters. Under the WPCA, the Department of Environmental Protection and Energy ("DEPE" or "the department") administers the New Jersey Pollutant Discharge Elimination System ("NJPDES") to regulate discharges of pollutants to these waters. The United States Environmental Protection Agency ("EPA") has approved the NJPDES program and thereby delegated to New Jersey the authority to implement the water pollution permit system required under the Federal Clean Water Act.

In 1990, Governor Florio signed substantial amendments to the WPCA, known as the Clean Water Enforcement Act ("CWEA"). The CWEA strengthened enforcement of New Jersey's water pollution control and prevention program by requiring the department to assess mandatory minimum penalties for certain violations, increasing the accountability of NJPDES permit holders and operators of publicly-owned treatment works, and providing for greater citizen participation in water pollution prevention and enforcement activities. The requirements of the CWEA which are relevant to this report became operative on July 1, 1991.

This executive summary presents the highlights of the Department's implementation of the WPCA in 1992 and the plans for further improvements in 1993 and beyond.

Enforcement

The department seeks to improve New Jersey's water quality by encouraging increased compliance with the water pollution control laws. The department's enforcement efforts have several facets designed to serve that goal, such as inspecting and monitoring dischargers; working with dischargers to identify and resolve potential and actual compliance problems; taking enforcement action when those efforts reveal violations of the law; and frequently negotiating resolutions of enforcement actions so that the permittees agree to upgrade their treatment works and processes to prevent future violations. The following findings show that these efforts are bearing fruit in the form of greater compliance.

Inspections of facilities show that more facilities are attaining compliance

The 1992 data concerning inspections show a trend toward compliance by more facilities. The department performed 2,919 inspections of facilities in 1992, compared with 1,406 in the last six months of 1991 (as noted above, the CWEA did not become operative until July 1, 1991). Following an inspection, a facility receives an "acceptable" or "conditionally acceptable" rating if it has valid permits for all of the discharges which require permits; it performs the monitoring required under the permits; it submits completed discharge monitoring reports ("DMRs"); no serious violations have occurred; it is not considered a "significant noncomplier" as a result of its record of recent violations; and a licensed operator operates the facility's treatment works. The number of facilities which the inspections found "unacceptable" decreased significantly in 1992. In 1991, 792 facilities earned "unacceptable" ratings, compared with 505 facilities in 1992.

Compliance with the self-reporting requirements which are the heart of the NJPDES permit system is improving.

The NJPDES permit system is based upon each permittee's own timely and accurate reporting of compliance with permits through the submission of discharge monitoring reports ("DMRs"). Compliance with DMR requirements is therefore central to compliance with the WPCA.

In 1992, permittees moved toward more substantial compliance with the DMR requirements. The number of violations for failure to submit DMRs decreased from 59 in the last six months of 1991 to 38 for all of 1992. The bulk of the DMR violations in 1992 consisted of omissions in otherwise complete DMRs, rather than failures to submit DMRs at all.

In addition, during 1992 a trend toward better compliance with all aspects of the DMR requirements began to develop. The number of DMR-related violations dropped from 301 in the first half of 1991 to 107 in the second half of the year.

The average penalty assessed in each formal enforcement action has decreased.

The department undertook 339 penalty assessment actions in calendar year 1992, compared with 233 in calendar year 1991. At the same time that the department increased the number of penalty assessments; the total dollar amount of the penalty assessments decreased from \$23.7 million in 1991 to \$17 million in 1992. Accordingly, the average penalty assessed in each formal enforcement action decreased. The decrease continues a trend reported in the 1991 CWEA Annual Report.

The continuing decrease in penalty assessments reflects the department's application of the statutory criteria established in the detailed in revised penalty regulations. The revised penalty regulations promulgated in August 1991 establish the uniform penalty policy required under the CWEA. In implementing that uniform penalty policy, the department employs penalty assessment procedures which require fact-specific determinations of penalty amounts. Through these measures, the department works to assess penalties which are rational, tailored to the facts of particular violations, and legally sustainable.

The department expects the application of this approach to penalty assessments to affect penalty collections in two ways. The decrease in penalty assessments tends to decrease total penalty collections. At the same time, however, the percentage of penalty assessments which the department actually collects should increase; as penalty assessments are viewed as more legally sustainable, the incentive to contest the assessment decreases, and a larger percentage of those penalties which are contested will be upheld on appeal. The net effect of these two influences in 1992 was to decrease penalty collections to \$10.8 million, compared with \$13.1 million in 1991.

The efforts of the Attorney General and the County Prosecutors continued to contribute to effective enforcement.

The Attorney General and the County Prosecutors are responsible for criminal enforcement of the WPCA 1992 saw the resolution of several criminal actions filed under the WPCA Most prominent, Ciba-Geigy Corporation and two of its officials entered into a plea agreement under which the company agreed to pay \$3.5 million in fines and the officials were each fined \$25,000.

Permits

In addition to an effective enforcement policy an efficient and thorough permit process is also essential to achieving the WPCA goal of improved water quality. The following findings describe improvements in the NJPDES permit process that serve this goal.

The department increased its total number of permit actions by nearly 140% over 1991.

In 1992 the department substantially increased the pace of its actions on NJPDES permits. The total number of permit actions (issuing new permits; renewing, modifying or terminating existing permits; and issuing discharge allocation certificates for new discharges or major expansions of municipal facilities) increased by nearly 140% over 1991, from 265 in 1991 to 630 in 1992. This increase included more than twice as many new permits (162 in 1992 compared with 73 in 1991) and more than four times as many permit modifications (317 in 1992 compared with 75 in 1991).

The department expects environmental benefits to result from the substantial increase in the number of new, modified and renewed permits issued. When action on a permit is completed, the permittee becomes subject to the most current standards available. Incorporating the most current standards into the permit generally results in the permit becoming more protective of water quality. In contrast, when a permit renewal or modification is delayed, the permittee may be operating in accordance with less stringent standards adopted several years earlier.

The department expects the increase in permit actions to bring economic benefits as well. Using more permits provides the permittees with greater certainty concerning regulatory requirements, and enables them to anticipate expenditures that they will need to undertake to improve water quality.

The department is developing an extensive restructuring of the NJPDES permit system.

The current NJPDES permit regulations have remained largely unchanged since they became effective in 1981. The regulations have not kept pace with developments in the Federal and State statutes, rules, policies and procedures affecting the issuance of permits. To address this problem, the department made substantial progress during 1992 in readying a substantial overhaul of the regulations governing the NJPDES permitting system.

The primary goal of the restructuring is to enable the department to address water quality issues comprehensively, with particular concentration upon issues which affect water quality over an entire watershed or basin. The primary means to this end is a watershed approach to permitting (rather than the existing site-specific approach) which will enable the department to focus attention upon specific pollutants in each water body and better evaluate the impact of control measures. On February 1, 1993, the department requested public comments regarding the policies, technical issues and administrative reforms that this restructuring entails.

Another goal of the restructuring of the NJPDES rules is to improve the efficiency of the permit application and permit issuance procedures. Some of the changes upon which the department has requested public comment include the following:

1. Allowing permit applicants to submit their applications in the form of draft permits to be reviewed and revised by the department. This change eliminates one step from the permit process in which the department prepares a draft permit based upon a traditional permit application;
2. Expanding the scope of changes to existing permits which can be accomplished through minor modifications;
3. Providing for automatic permit renewal when a new permit review would provide no environmental benefit;
4. Allowing concurrent review and processing of water quality management plan amendments and NJPDES permit applications; and
5. Increasing the use of general permits and permits by rule, instead of individual permits for each applicant.

The department eliminated duplicative NJPDES permits for 87 permittees.

Twenty-three delegated local agencies in New Jersey operate municipal treatment works under pretreatment programs approved by the department. Under these pretreatment programs, the delegated local agencies regulate discharges to their treatment works.

In December 1992 the department adopted amendments to the NJPDES rules to comply with the mandates of CWEA and the Federal pretreatment regulations. One important goal of those amendments was to eliminate the duplication of permitting and enforcement efforts between the department and the delegated local agencies. The CWEA granted the delegated local agencies enforcement powers equivalent to those of the department; the department therefore determined that it was unnecessary to require industries with permits issued by delegated local agencies to obtain permits from the department as well.

As a result of this rule change, 87 permittees had their NJPDES permits terminated and no longer pay fees to the department for those permits. In addition, eliminating the duplicative permits enabled the department to concentrate its permitting and enforcement efforts more efficiently and more effectively in those areas in which there was no duplication of effort.

Delegated Local Agencies

A significantly smaller proportion of the violations reported by delegated local agencies were serious violations.

The delegated local agencies have reported information showing that they are continuing to perform compliance monitoring and inspections of their permittees actively and in a highly visible manner. The delegated local agencies reported a total number of violations in 1992 which was proportional to the number of violations they reported in the last six months of 1991. However, a significantly smaller proportion of the 1992 effluent violations qualified as "serious violations." The percentage of effluent violations which were serious violations decreased from 50.5% in 1991 to 41.4% in 1992.

Water Quality Assessment

The department will analyze the effects of permitted discharges upon water quality.

In its first eighteen months implementing the department focused upon the permitting, enforcement, criminal and fiscal aspects of the law. To evaluate how those efforts have affected water quality, in 1993 the department is commencing a study of water quality both upstream and downstream of selected discharge sites. The study will enable the department to evaluate the effect of those selected discharges upon water quality. The study will encompass both surface waters and ground waters. The results of the study will assist the department in gauging the effectiveness of its entire NJPDES program and in planning future initiatives.

Use of Penalty Revenues

The funding of the NJPDES permit program has been the subject of ongoing discussion and debate. In July 1992, DEPE Commissioner Weiner convened a task force to evaluate the system under which NJPDES fees are assessed, with a view toward making that system more fair and rational. Former Senator Laurence Weiss chairs the task force, which includes representatives of the Chemical Industry Council, the Association of Environmental Authorities, local governments and other interested parties. The department will continue to engage in dialogues with Senator Weiss and others in an effort to keep improving the NJPDES program.

CWEA penalty revenues contributed substantially toward the cost of the NJPDES program.

The NJPDES program is funded primarily from fees paid by permittees. However, the provides for penalty revenues to be used exclusively for enforcement and implementation of the WPCA, except when otherwise specifically provided by law. Penalty revenues applied to enforce and implement the WPCA reduce the amount which must be raised through fees, dollar for dollar. The result is a reduction in the portion of the Program costs funded by those permittees who comply with the law, and a shift of a substantial portion of the cost to permittees who do not attain compliance.

As a result of the application of penalty revenues, there will be no increase in the portion of NJPDES permit program costs funded with fees in the year ending June

30, 1993. For the majority of NJPDES permittees, 1993 fees have been reduced, with the average reduction amounting to five percent.

As noted above, the department expects penalty revenues to continue decreasing as compliance with the WPCA increases. For this reason the department cautions against relying upon penalty collections to continue providing this level of funding toward the permit program over the long term.

The report which follows this Executive Summary presents detailed information under the following subject headings: Enforcement, Permitting, Delegated Local Agencies, Criminal Actions, Fiscal, and Water Quality Assessment. The report also includes an Introduction which outlines the relevant requirements of the WPCA and the CWEA.

TESTIMONY OF STEVEN A. HERMAN, ASSISTANT ADMINISTRATOR FOR ENFORCEMENT, ENVIRONMENTAL PROTECTION AGENCY,

Good afternoon, Mr. Chairman and Members of the Subcommittee. I am Steven A. Herman, Assistant Administrator for Enforcement of the Environmental Protection Agency (EPA). I appreciate the opportunity to testify before you today on Clean Water Act (CWA) reauthorization. Although the Act is one of our oldest environmental statutes, it is presently facing new challenges as we gain further knowledge of the disparate sources of water pollution in this country. We believe that the complexity of the water pollution problems requires a sophisticated and ever-vigilant water enforcement program, both to ensure the continuation of environmental gains already achieved and to ensure that the goals embraced by the Congress in this reauthorization translate into further gains during the years ahead.

My testimony today is limited to the enforcement provisions of the Act, both as to how the existing provisions have worked and what new water enforcement amendments would help us make further environmental gains. I will quickly review the enforcement authorities that are now available to us under the CWA, as well as the water programs that these authorities enforce. I will then look at what has been achieved in water enforcement, and outline our future water enforcement objectives. Finally, I will suggest some changes to the Act which would help us achieve those objectives. I am pleased to note that some of the enforcement changes that we support are already included in S. 1114.

CLEAN WATER ACT PROGRAMS AND ENFORCEMENT AUTHORITIES

The CWA establishes several distinct programs, the requirements of which are enforceable: (1) the National Pollutant Discharge Elimination System (NPDES) program, for controlling the discharge of pollutants from point Sources (defined as a "discernable, confined and discrete conveyance" such as a pipe or a ditch); (2) the Industrial Pretreatment Program, for controlling industrial discharges to publicly owned (sewage) treatment works (POTWs); (3) the § 404 program, for controlling the discharge of dredge and fill materials to wetlands and other waters of the United States; and (4) the Oil Pollution Act, § 311 of the CWA, for controlling and responding to spills of oil and hazardous substances.

None of these programs is enforced by EPA alone. In each case Congress has provided that EPA enforce in partnership with the States, or with local municipalities, and in some instances with another Federal agency. Citizens have also been provided enforcement authority for most instances in which EPA could enforce.

National Pollutant Discharge Elimination System

Pursuant to § 301 of the CWA, it is unlawful for any person to discharge any pollutant from a point source into the waters of the United States except in compliance with various enumerated sections of the CWA. To comply with the Act, one must obtain an NPDES permit authorizing and regulating the discharge of pollutants. The NPDES permit, issued either by EPA or by a State under a program approved by EPA, establishes permissible levels of pollutants that may be discharged. The permits also establish monitoring, testing, and reporting requirements.

EPA and approved States have issued approximately 64,000 NPDES permits controlling point source discharges of pollutants. Of these, approximately 7,100 permits are issued to "major" dischargers, either large industries or municipal operators of larger POTW. EPA also has a general NPDES permitting program applicable to specific programs, e.g. stormwater and feedlots.

Industrial Pretreatment Program

The NPDES permitting program, described above, applies only to facilities that discharge directly into surface waters, e.g. lakes, rivers, wetlands, or oceans. Facilities that discharge into a sewerage system that leads to a POTW, rather than directly into a surface water, are regulated under the CWA Industrial pretreatment program. This program requires that controls be placed on the discharge of pollutants to POTWs as necessary: (1) to prevent pollutants from interfering with the functioning of the POTW; (2) to prevent those pollutants from causing the POTW to violate its NPDES permit; and (3) to assure compliance with the POTW's sludge use or disposal practices.

Generally, municipalities that operate POTWs with a daily flow of more than 5 million gallons are required to operate an industrial pretreatment program. This program is incorporated into the municipality's NPDES permit and is enforceable under the CWA The Industrial pretreatment program at smaller POTWs is generally implemented either by the EPA or by an approved State. To implement the program, significant industrial users must be issued permits or orders regulating their discharges. These permits or orders, similar to NPDES permits, set out limitations on pollutants and other requirements which must be met in order to comply with the CWA.

Wetlands

Section 404 of the Act establishes the primary Federal regulatory program protecting wetlands. Pursuant to this section and §301 of the Act, discharges of dredged or fill material into wetlands and other waters of the United States are illegal, unless permitted or exempted from regulation. This section is jointly implemented by EPA and the Army Corps of Engineers. The Corps has issued general permits for categories of activities having only minimal environmental impacts as well as activities in certain categories of waters, such as small, isolated wetlands. Other regulated discharges to waters of the United States must, be authorized pursuant to an individual § 404 permit. Activities in waters that are typically regulated under § 404 include fills to create residential, commercial and industrial development sites, infrastructure development, water resource projects, and conversion of wetlands to uplands for farming and forestry. Like the NPDES permitting program, States may be approved to operate the § 404 permitting program.

Oil Pollution Act

Section 311 of the CWA, as amended by the Oil Pollution Act of 1990 (OPA), prohibits discharges of harmful quantities of oil and hazardous substances into waters of the United States. This provision differs from the permitting programs under the Act described above in that it is intended to deal with spill situations, where the discharges could not be anticipated in advance. This provision therefore contains measures intended to prevent spills from occurring, and to cope with spills once they have occurred. Preventative measures include the requirement that immediate notification be provided to the government upon discovering that a spill has occurred, and a requirement that owners and operators of non-transportation facilities handling oil prepare and comply with a spill prevention, control, and counter-measure (SPCC) plan. In addition, § 311, as amended by the OPA, now requires certain facilities and vessels to prepare and submit to the government response plans for cleaning up oil and hazardous substance spills. Finally, section 311 establishes a five year felony penalty for failure to report a spill of a hazardous substance or oil.

In the context of clean-up, § 311 makes owners and operators of vessels or facilities from which oil or a hazardous substance is discharged liable to the United States for costs incurred in the removal of the spill (subject to certain defenses). Costs can include expenses incurred by the United States in assessing damage to, as well as restoring and replacing, natural resources harmed by the spill.

EPA and the Coast Guard jointly administer the spill penalty and response programs under § 311. Although States do not administer the program, § 311 does not preempt any State or municipality from imposing additional requirements or liability related to spills.

Clean Water Act Enforcement Authorities

Congress has provided EPA with several enforcement mechanisms for responding to violations of the requirements of the Act. These authorities fall into four general categories: administrative enforcement, civil judicial enforcement, criminal enforcement, and Federal facilities enforcement.

Administrative Enforcement

Administrative Compliance Orders

Section 309(a) authorizes the Administrator to issue, upon finding that a person is in violation of the Act or a permit under the Act, an order requiring compliance with the Act. These orders are not subject to review in an administrative hearing or court except upon enforcement of the order by the Agency. Compliance orders are the Agency's first level of formal enforcement.

Administrative Penalty Orders

In 1987, when last reauthorizing the CWA, Congress added a new § 309(g), authorizing the Agency to impose penalties in administrative actions for violations of the Act. These actions can be brought for essentially the same set of violations for which civil judicial actions could be brought, but at a much reduced cost in terms of Agency resources. However, unlike the civil judicial authority, administrative penalties are not authorized for violations of an administrative compliance order.

Two classes of administrative penalties are established under § 309(g). Class I penalty actions, subject to, an expedited hearing process, are limited to \$10,000 "per violation", and a total penalty of no more than \$25,000. Class II administrative penalty actions, subject to more elaborate Administrative Procedures Act (APA) hearing procedures, are limited to \$10,000 "for each day during which the violation continues" and a maximum penalty amount of \$125,000.

Section 311 Administrative Orders

Under § 311 of the CWA, as amended by the OPA, Congress has established an administrative penalty scheme similar to that under § 309(g) of the CWA. The Coast Guard or EPA may assess a Class I administrative penalty of \$10,000 per day of violation, up to a maximum of \$25,000, or a Class II administrative penalty of \$10,000 per day of violation, up to a maximum penalty of \$125,000.

Civil Judicial Enforcement

Pursuant to section 309 of the Act, the Administrator is authorized to commence an action in Federal district court to seek to enjoin a violator of the CWA to comply with the Act and to obtain penalties. EPA may commence a civil action against any person who is regulated under the water pollution prevention programs of the CWA described above. Violators are subject to civil penalties of up to \$25,000 per day for each violation. Courts are required to consider specific factors in determining an appropriate penalty amount, including, among others, the seriousness of the violations and any economic benefit that accrued to the violator as a result of the violations.

Section 311 Civil Judicial Enforcement

Section 311 of the CWA establishes a separate civil judicial penalty authority applicable to spills of oil and hazardous substances. Any person who is the owner, operator or person in charge of any vessel or facility from which oil or hazardous substances are spilled is subject to civil penalties of up to \$25,000 per day of violation or \$1000 per barrel of oil or unit of reportable quantity of hazardous substance spilled. If the spill was the result of "gross negligence" the minimum penalty is set at \$100,000 and the maximum at \$3000 per barrel of oil or unit of reportable quantity of hazardous substance spilled.

Section 311 Removal and Cost Recovery Authority

While § 311 does not provide the court with authority to order injunctive relief, any person, including the owner or operator of a vessel or facility, can be subject to equitable relief in the event of an imminent and substantial threat from an actual or threatened discharge. Any person who fails to properly carry out removal of a discharge under an order is subject to a fine of \$25,000 per day of violation or an amount up to three (3) times the costs incurred by the Oil Spill Liability Trust Fund.

Criminal Enforcement

In its present form, the CWA provides for both misdemeanor and felony violations. Negligent criminal violations of the Act are misdemeanors, subject to fines of up to \$25,000 per day of violation and jail for up to 1 year. These sanctions are essentially doubled for second offenders. Knowing violations of the Act are felonies, subject to fines of up to \$50,000 per day of violation and jail for up to 3 years for a first offense, again essentially doubled for second offenders. The Act also provides, in recognition of the importance of the self-reporting and monitoring scheme of the

Act, that knowing false statements are punishable as felonies, subject to jail sentences of up to two (2) years. Finally, the CWA provides that a person who knowingly violates provisions of the Act and also knowingly places another person in imminent danger of death or serious bodily injury may, upon conviction, be punished by a fine of up to \$250,000 and fifteen (15) years in jail.

Since 1972 the CWA has also included a provision which prohibits the Federal government from contracting with any person who is convicted of a criminal violation under the Act. This requirement that mandatory financial consequences flow from the fact of criminal convictions has proven to be a very effective adjunct to the criminal enforcement of violations of the Act.

Federal Facilities Enforcement

Compliance at Federal facilities is monitored by EPA primarily through facility inspections and the analysis of self-monitoring reports which are required to be submitted by certain CWA permittees. Upon the discovery of a violation at a Federal facility, EPA may initiate an enforcement action pursuant to the CWA administrative compliance order authority and Executive Order 12088. Typically, the facility is notified in writing of the violation and given an opportunity to respond to the notice within a specified period of time. EPA and the Federal agency then negotiate a "Federal Facility Compliance Agreement" or an "Administrative Order on consent" regarding compliance matters at the violating facility. These agreements/orders may be enforced in Federal district court under the citizen suit provision of the Act.

CLEAN WATER ACT ENFORCEMENT ACCOMPLISHMENTS

A vigorous enforcement program is essential to the successful implementation of the water pollution prevention programs established under the CWA. EPA's CWA enforcement program has been increasingly effective over the past decade. For example, in 1987, only 74% of municipal facilities had installed treatment equipment necessary to meet technology-based requirements. That number is now 97%. As a result of our enforcement efforts, the number of municipalities operating their POTW in significant non-compliance with the Act in any one quarter of a year has decreased from an average of 15% in 1986, to 8% in the second quarter of 1993.

In Fiscal Year 92, EPA took 1,450 enforcement actions under the CWA, obtaining over \$23 million in penalties. In the first three quarters of FY 93 alone, \$947,000 in criminal fines, and 288 months of criminal incarceration had been imposed against criminal violators of the CWA as a result of criminal enforcement action taken by EPA and the Department of Justice. Currently, we have 103 open cases being investigated as potential criminal cases under the CWA.

A number of recent civil judicial cases illustrate the importance of enforcement in the effort to protect the environment. Our multi-media enforcement action against the Inland Steel Company, in East Chicago, Indiana, which settled earlier this year, is a recent example of an enforcement and environmental success. The Inland facility is located on a peninsula that the company created on the shore of Lake Michigan. The peninsula itself is contaminated, as well as the sediments surrounding it on the floor of the Lake. The United States filed suit against Inland Steel in October of 1990 under the CWA, the Clean Air Act (CAA), the Resource Conservation and Recovery Act (RCRA), and the Safe Drinking Water Act. This case is the largest multi-media enforcement action brought by the Agency to date. The settlement we achieved in this case provides for a \$3.5 million cash penalty, and \$26 million in sediment clean-up and other environmental projects, *over and above* the injunctive relief necessary for Inland to attain compliance with the environmental statutes.

In the multi-media case *U.S. v. The Dexter Corporation*, EPA and the Department of Justice negotiated a civil settlement in 1992 that requires Dexter Corp. to pay \$9 million in civil penalties, \$7.2 million of which were CWA penalties. In addition to paying this penalty, and engaging in extensive corrective action at its facility, Dexter is required to conduct an extensive multi-media environmental compliance audit at its facility. The United States also brought a criminal enforcement action against Dexter Corporation for its CWA and RCRA violations to which Dexter pled guilty and was fined \$4 million.

In September of 1992, in the case of *U.S. v. Louisiana Pacific Corp.*, Louisiana Pacific ("LP") agreed to implement an all chlorine free bleaching process at its Samoa, California pulp mill. LP also paid a civil penalty of \$2.9 million (plus interest) and agreed to implement treatment measures to abate toxicity in the mill's effluent. The use of chlorine at LP's Samoa mill after September 1, 1995 is strictly prohibited, and LP will incur stipulated penalties of \$25,000/day, if it uses chlorine at this mill after the 1995 deadline. The elimination of chlorine from the mill's bleaching process is a major pollution prevention innovation, and is expected to yield significant

environmental benefits. The dioxin and other highly toxic chlorinated organic compounds generated in the chlorine bleaching process should be virtually eliminated from the mill's wastewater. When LP complies with the terms of this modification, it will be, to our knowledge, the first pulp mill in the country to convert to a 100% chlorine free bleaching process, and could set a new standard for environmental stewardship in the pulp and paper industry.

Under an agreement reached with the United States in *U.S. v. Chevron U.S.A., Inc.*, Chevron U.S.A., Inc. agreed to pay \$6.5 million in criminal fines (3rd largest in EPA history) and \$1.5 million in civil penalties, to resolve past CWA violations at Chevron's Platform Grace oil production facility, located in federal waters in the Santa Barbara Channel. A civil complaint filed against Chevron on December 29, 1988 alleged numerous violations of the CWA. Chevron had consistently violated the effluent limitations established in its NPDES permit from 1982 until 1987 as well as the monitoring and reporting requirements of its permit. The criminal case dealt with the failure to report, as well as illegal dilution and other discharges which were committed by Chevron at the Platform Grace facility. The criminal action exemplifies the Agency's commitment to the integrity of the self-monitoring system under the CWA.

CITIZEN ENFORCEMENT OF THE CLEAN WATER ACT

When discussing enforcement of the CWA, mention must be made of the crucial contributions made by citizens in enforcing against polluters. The Agency does not have the resources to enforce against every violator of the Act, not even against some serious violators. By helping to fill these gaps that the Agency and states have been unable to fill, citizens have played a very important role under the CWA by creating an additional deterrent to noncompliance. Violators of the CWA must worry about not only Federal and State enforcement, but also about a vigorous citizen enforcement presence.

Citizens have also played an important role in assisting CWA Federal enforcement by developing extremely favorable legal precedent under the Act. Many judicial decisions interpreting the statute contain language that makes it easier for the United States to resolve its CWA enforcement actions on favorable terms. The Agency has provided assistance in citizen enforcement actions, particularly in appellate matters. We look forward to continuing a positive, mutually beneficial relationship with citizen enforcers.

ADMINISTRATION THEMES FOR CLEAN WATER ACT ENFORCEMENT

As the water pollution prevention programs under the CWA have matured, the Agency has refocused its energy to better confront old and new water pollution problems. These new approaches are being incorporated into the Agency's enforcement strategies. I want to talk about three themes of this Administration for confronting water pollution in the enforcement context.

Theme 1: Pollution Prevention

Until recently, the Agency has primarily focused on attaining reductions in the amounts of water pollutants discharged by applying "end-of-the-pipe" wastewater treatment. The NPDES program relies largely on the use of technology-based and water quality-based standards in determining the amounts of treated pollutants that an industry or a municipality may legally discharge. The Agency is now focusing more of its attention on "pollution prevention" as a means of reducing the amounts pollutants discharged to the environment. Under the pollution prevention approach, a discharger achieve a reduction in pollutants released to the environment by producing less of each pollutant in the first place rather than simply by treating the wastewater. Source reductions in the quantities of pollutants used, produced, and disposed of may be achieved through a variety of means, including improved operation and maintenance of a facility to changes in the processes employed at a facility.

There are three ways in which pollution prevention is becoming an important component of CWA enforcement. First, and perhaps most important, our vigorous enforcement program has created a strong incentive for industry to embrace pollution prevention as a way to reduce their environmental liabilities. Companies have told EPA that a key reason that they invest in pollution prevention is to reduce the environmental liability associated with waste generation. A company that produces less wastewater containing fewer pollutants will greatly reduce its risk of violating the CWA.

Second, when EPA brings a CWA civil enforcement case we always require the violator to attain prompt compliance with the Act. In appropriate instances, we may

also encourage violators to implement creative pollution prevention techniques as a way to remedy the violations. Further, as part of a settlement of a CWA enforcement case, EPA may accept a smaller settlement penalty if the violator is willing to commit to implement supplemental environmental projects that incorporate pollution prevention principles and practices and compliance auditing that move the violator beyond compliance with the Act.

Third, as part of the settlement of a civil enforcement action; EPA may require the violator to conduct an environmental compliance or management audit. Such audits will often give the companies additional information to use in implementing a pollution prevention program and identifying compliance problems that must be addressed. EPA also may require companies to conduct, as part of the settlement of a case, a pollution prevention facility assessment in which the company must identify all wastestreams and investigate pollution prevention options for reducing or eliminating these wastestreams.

Theme 2: Multi-Media Ecosystem and Geographic Enforcement Targeting

Ecosystem enforcement targeting is one of the most important new directions the Agency is taking in its efforts to remedy water quality problems. The Northwest Indiana/Grand Calumet River Geographic Enforcement Initiative has been a model for addressing sensitive environmental areas with targeted enforcement. The coordinated enforcement actions taken in the Grand Calumet River basin provide an excellent example of the advantages of the ecosystem approach to enforcement. EPA has taken seven enforcement actions against various polluters as part of this initiative, under five environmental statutes including the CWA; most actions cite violations of more than one statute. The objective of this coordinated approach is the clean-up of the Grand Calumet River, including the removal of tons of sediments that have been contaminated by discharges and releases of toxic chemicals over the past century. It is by using all of our environmental enforcement tools, and by targeting all of the polluters in the river basin, that the Agency has been able to achieve such a high level of remediation of the Grand Calumet.

Theme 3: Environmental Justice

The Clinton Administration is committed to assuring that our environmental protection programs are equally protective of our citizens, regardless of their, race or class. To this end, we have begun to consider environmental justice concerns in our inspection and enforcement targeting. Environmental equity concerns played a role in our Grand Calumet River Initiative, which I mentioned previously in the context of ecosystem targeting. As is often the case in situations involving particularly egregious ecosystem contamination, the residential areas surrounding the industrial facilities in the Grand Calumet River Basin are some of the poorest areas in Northwest Indiana. Cleaning up the Grand Calumet River Basin will assist in alleviating the is proportionate environmental effects suffered by poor and minority communities surrounding these industrial facilities.

The Agency is also developing an enforcement initiative that will target waterways for which fish consumption advisories have been issued by States. Several studies have demonstrated that economically disadvantaged Native Americans, Latin Americans, Asian Americans, and African Americans may consume larger quantities of fish than is assumed in EPA'S current risk assessment evaluations. These populations may therefore be at increased risk from polluted waterways. Cleaning up contaminated waterways in these communities is therefore of great importance to the health of these disadvantaged populations.

SUGGESTIONS FOR IMPROVING THE CLEAN WATER ACT ENFORCEMENT MECHANISMS

In general, the enforcement scheme established under the CWA works well. This scheme has been revised during successive reauthorizations of the statute and has been improved on each occasion. There is still room for improvement, and there are some areas that are of particular concern to the Agency that need attention.

1. Waiver of Sovereign Immunity and Federal Facility Enforcement

In April 1992, State and citizen enforcement of the CWA against Federal facilities was adversely impacted when the U.S. Supreme Court ruled in *Department of Energy v. Ohio*, 503 U.S.—, 118 L.Ed.2d 255 (1992), that Congress had not waived Federal sovereign immunity from liability for civil, "punitive" penalties imposed by a State for past violations of the CWA (or RCRA). The Court determined that penalties are unavailable for past violations of the CWA committed by Federal facilities under the citizen suit provision of the Act and under penalty provisions of State

clean water statutes that are part of a federally approved state NPDES program. A subsequent decision, *Sierra Club v. Lujan*, 972 F.2d 312 (10th Cir. 1992), further held that penalties for past violations are unavailable whether EPA or the state issued the NPDES permit.

The *Department of Energy v. Ohio* decision made it clear that Federal facilities are not subject to the same enforcement threat which faces non-Federal entities regulated under the Act. We are concerned about this limited enforcement threat against Federal facilities, particularly in light of the 1988 General Accounting Office report that found that State enforcement actions against non-compliant Federal facilities result in increased priority of environmental compliance and prompt corrective action. (See, General Accounting Office (GAO) report, *Water Pollution: Stronger Enforcement Needed to Improve Compliance at Federal Facilities* (December, 1988)). This report also indicated that the significant noncompliance rate for Federal facilities was twice that of non-Federal facilities. Despite improvements since 1988, Federal facilities have consistently demonstrated higher significant noncompliance rates than non-Federal facilities under the CWA.

In October 1992, partly in response to the *DOE v. Ohio* decision, Congress passed the Federal Facility Compliance Act which 1) prospectively waived the Federal government's immunity from penalties for violations of RCRA occurring after the Compliance Act's effective date, and 2) provided EPA with the same RCRA administrative enforcement authority against Federal facilities as for private parties. However, this legislation did not address sovereign immunity under the CWA. The recently introduced S. 1114 provides for an expanded waiver of the United States' sovereign immunity under the CWA to overturn the results of *DOE v. Ohio*, and would establish Federal administrative enforcement against Federal facilities.

A. Waiver of Sovereign Immunity

We agree with the principle that section 313 of the CWA should be amended to prospectively waive the United States' sovereign immunity from penalties for all CWA violations occurring after the amendment's effective date by Federal facilities, and to allow states to obtain penalties for Federal facility violations occurring after the amendment's effective date of requirements in state water laws respecting the control and abatement of water pollution, but we need additional time to work with the Committee on the details of this provision. This amendment would parallel the policy of the Federal Facility Compliance Act (FFCA), which clarified the waiver of sovereign immunity under RCRA. The amendment should not alter in any manner existing agreements, permits, compliance agreements, or administrative or judicial orders. The amendment should not affect existing provisions that Federal employees are not personally liable for civil penalties resulting from acts or omissions within the scope of their official duties. Federal employees, but not Federal departments or agencies should be subject to criminal sanctions.

B. Federal Facilities Enforcement

For effective enforcement at Federal facilities under the CWA, and consistent with the Federal Facilities Compliance Act, Federal facilities should be subject to the same administrative compliance orders and penalties as non-Federal parties. The applicable Department or agencies should have the opportunity to confer with the Administrator before the administrative order becomes final. By adopting the same enforcement scheme for Federal facilities under both the RCRA and the CWA, RCRA and CWA actions can be more easily combined into one action, as appropriate, thereby simplifying enforcement for both EPA and Federal facilities and conserving scarce enforcement resources.

2. Administrative Penalty Cap

One of the great successes of the 1987 amendments to the CWA was the grant of administrative penalty authority to EPA. The result has been an increase in the overall level of enforcement activity. In 1986, prior to the amendments, EPA brought 119 civil judicial enforcement actions under the CWA. In 1992, the number of CWA actions brought was 77 judicial actions and 238 administrative penalty actions.

Further, administrative actions under the CWA are usually completed in about six months versus several years for judicial cases. Now, more than 80% of the penalty actions taken by the Agency under the Act are brought administratively, not judicially. They use only a fraction of the Agency resources required to bring a judicial case, generally require no resources from the Department of Justice, and, of course use up none of the precious judicial calendar. We are examining possibilities, including discussion of the penalty cap, for greater use of our CWA administra-

tive enforcement provisions with DOJ, with the goal of creating a more efficient, effective enforcement program. In addition, we would like the statute amended to provide authority for EPA to seek administrative penalties for violations of administrative compliance orders, with appropriate due process protections for defendants.

3. Field Citation Authority

As we have gained experience with water administrative penalties, we find a number of situations which warrant small penalties most appropriate to a field citation system. Examples that might be dealt with under a field citation system are small penalties for failure to submit a permittee's NPDES discharge monitoring report on time or for failure to submit a required stormwater permit application. A typical field citation program would involve the issuance of a citation with the specified dollar penalty to be paid by the violator. Under our existing authority, we must request public comment before the administrative penalty amount can become final, thereby preventing our inspectors from issuing a field citation at the time the violation is detected. We commend S. 1114 because it would establish field citation authority, recognizing that public comment is not needed for certain administrative penalties under \$25,000. (Review procedures, however, would be maintained, or the violator would retain all appeal rights.)

4. Remove State Enforcement Bar to Federal Actions

As presently written, the Administrative enforcement provision of the CWA provides that certain state administrative enforcement actions may serve to bar Federal enforcement. Specifically, the Act provides that a Federal penalty action, as well as citizen penalty action, is prohibited if a State has already "commenced and is diligently prosecuting" or has concluded an administrative penalty action against the same violator for the same violations. Unfortunately, this preclusion of Federal and citizen enforcement of the Act has been broadly interpreted by some courts and, especially as interpreted, is limiting the Agency's ability to assure that violators are adequately deterred. In *North and South Rivers Watershed Association v. Town of Scituate*, 949 F.2d 552 (1st Cir. 1991), the appellate court held that an administrative order issued by the Commonwealth of Massachusetts barred a subsequent citizen suit. The court so held in spite of the facts: 1) that Massachusetts is not approved to operate the point source control program under the CWA, 2) that the Commonwealth's order did not assess any penalty, 3) the Commonwealth lacks authority under that section of Massachusetts law to impose a penalty, and 4) the citizen sought injunctive relief as well as penalties. The citizens were consequently barred from seeking penalties or injunctive relief for the violations of the Act covered by the State's order. A court could find the United States to be barred as well.

The administration believes that a strong and effective partnership must be the foundation of any enforcement scheme that is to be effective. Thus, while preservation of the ability of the United States to bring a civil action against a violator, even where a state has taken an enforcement action, is an important component of an effective enforcement scheme, state enforcement efforts are fundamental to the scheme underlying the CWA. Unfortunately, State resources for enforcement are not always sufficient to assure future compliance. In some cases, the State does not have adequate enforcement resources or is unable to muster the will to adequately confront and penalize a major industry. When this is true, it is crucial that the power of the Federal government is available to insure that the violations are halted, that the violator is adequately penalized and does not profit from the violations, and that the violator addresses any environmental damage caused by the violations.

Therefore, we support the goal sought in S. 1114 as introduced by Senators Baucus and Chafee to assure that deterrence is achieved through adequate enforcement, and to promote adequate enforcement by the States, the Agency seeks revision of the statute to remove the limitation on Federal enforcement in the face of State enforcement. We will work in the weeks ahead with the staff to ensure that scarce Federal and State enforcement resources are optimally deployed where they are needed.

5. Strengthen Citizen Enforcement

As noted earlier, citizens' actions are an important component of the overall CWA enforcement effort. Unfortunately, the ability of citizens to maintain a suit under the CWA has been substantially eroded by the courts since 1987, when the CWA was last reauthorized. A 1987 decision of the U.S. Supreme Court, *Chesapeake Bay Foundation v. Gwaltney of Smithfield*, 108 S.Ct. 376 (1987), held that citizens could not seek penalties for wholly past violations of the Act, but were limited by the lan-

guage of the statute to maintaining suit for "ongoing" violations of the statute. To be ongoing, the Court ruled, there must be a reasonable likelihood, at the time the citizens file their complaint, that the violator will continue to violate in the future. We believe this should be changed to allow citizens to sue where violations are serious or the environmental consequences need to be addressed.

The decision of the Supreme Court affected not only citizen suits under the CWA, but also potentially impeded citizen suits under the CAA and RCRA. The CAA contained the same wording as the CWA. In 1990, in response to the Supreme Court decision, Congress amended the CAA citizen suit language to limit the preclusive effect of that decision by explicitly allowing citizens to maintain suit for past violations, when those violations have been repeated.

Because citizen suits are an important component of the CWA enforcement scheme, and because requiring proof of an ongoing violation has unduly complicated citizen enforcement and lessened its deterrent effect, the EPA supports amendment of the CWA to allow citizen suits for past violations of the Act. We are pleased that this amendment is proposed in S. 1114.

6. CWA Criminal Enforcement Authority

A. Knowing Endangerment

Criminal enforcement under the CWA has been very effective in punishing violators and deterring violations. Experience gained over time, however, suggests that some of the criminal enforcement provisions require clarification, refinement or upgrading to make them more consistent with other environmental statutes.

The CWA currently provides for up to 15 years of imprisonment for committing certain knowing violations of the Act and "thereby" knowingly endangering persons. (Similar knowing endangerment provisions exist in the CAA and RCRA.) There are three clarifications and modifications to the CWA's knowing endangerment provision that we recommend (none of which are addressed in S. 1114):

First, we recommend that all knowing violations of the CWA that are felonies under § 309(c)(2) be made predicate offenses for knowing endangerment under § 309(c)(3). This would ensure that all types of knowing violations of the Act may be punished appropriately.

Second, we recommend the deletion of the affirmative defense, in CWA § 309(c)(3)(B)(ii), that the conduct charged was consented to and that the danger and conduct charged were reasonably foreseeable hazards of an occupation or scientific experiment. (Similar provisions in the CAA and RCRA also should be deleted).

Third, we recommend that the language of the knowing endangerment provision be clarified to provide that any knowing endangerment "in connection with, or in the course of" a felony violation is punishable as a knowing endangerment. This clarification is needed in order to overturn an adverse judicial opinion (*United States v. Borowski*, 977 F.2d 27 (1st Cir. 1992), rehearing denied, ___ F.2d ___ (1st Cir. January 7, 1993)), in which the court gave an overly restrictive, technical reading to the knowing endangerment provision, which severely limited its application in a manner we believe Congress did not intend. (In *Borowski*, the First Circuit overturned the knowing endangerment conviction of a person who ordered employees to pour dangerous, toxic chemicals down company drains that were connected to a publicly owned sewerage system, in knowing violation of CWA pretreatment requirements. There was proof at trial that company employees actually were harmed in the course of this illegal activity, but the court ruled that their harm was not within the purview of the knowing endangerment felony because it occurred before the chemicals reached the sewer system.)

B. False Statements and Cover-ups

The CWA currently provides felony sanctions for the knowing falsification of required documentation and tampering with compliance monitoring devices [§ 309(c)(4)]. We recommend two modifications to this provision. First, we recommend that this provision be extended (consistent with provisions already in the CAA and RCRA) to include sanctions for a knowing omission or failure to maintain material information required to be filed or maintained by the Act, and of a knowing failure to install or use required monitoring devices or methods. Second, we recommend that there be a higher penalty (5 years rather than 2 years of imprisonment) when the purpose of the knowing false statement or omission is to conceal a substantive, discharge-related violation of the CWA.

C. Citizen Awards

The Agency seeks new authority to allow monetary awards to be made to those who report violations or provide information which leads to the criminal conviction

(or civil liability) of those who violate the CWA. Similar provisions already exist in other environmental statutes (e.g., Comprehensive Environmental Response, Compensation and Liability Act, the CAA, the Endangered Species Act, and the Act to Prevent Pollution from Ships), serving as an additional deterrent to violations.

D. Enhance CWA Felony Sanctions

Both the CAA and RCRA provide for up to 5 years of imprisonment for a first felony conviction (for certain knowing violations). Although knowing violations of the CWA are just as serious as knowing violations of these other laws, currently the CWA provides for only 3 years of imprisonment for first felony convictions. We believe the felony sanctions in the CWA should be enhanced in order to make them consistent and equivalent with those in the CAA and RCRA.

7. Contractor Listing

CWA § 508 currently provides that no Federal agency may enter into a contract with any person who has been convicted of any criminal, offense under § 309(c), if such contract is to be performed at any facility or site at which the violation occurred, and if such facility or site is owned, leased or supervised by such person; this prohibition continues until the Administrator certifies that the condition giving rise to such conviction has been corrected. (As Assistant Administrator for Enforcement, I am the EPA official to whom authority has been delegated to determine when the condition has been corrected, so that the violator may be removed from the List of Violating Facilities.)

S. 1114 proposes a number of significant improvements to this "contractor listing" provision. For example, S. 1114 extends the prohibition to convictions under the Rivers & Harbors Act of 1899, which will help prevent convicted violators from entering into plea agreements admitting guilt under other acts to avoid listing consequences for their acts which pollute waters of the United States. S. 1114 attempts to clarify that the prohibition may extend to more than one facility or site owned or operated by the person subject to listing and requires applicants for Federal contracts, grants, or loans to disclose affirmatively any conviction giving rise to listing under this provision. Some of the changes recommended by S. 1114 reflect policies already being implemented by EPA or are consistent with changes already made to contractor listing as a result of the amendments to the CAA which also contains a mandatory listing consequence for criminal violators.

We would also like to explore with the Committee an extension of the listing authority in accordance with the CAA listing provision, to allow the Administrator to extend the listing prohibition to other facilities owned, operated or supervised by the person subject to listing.

8. Clean Water Act Emergency Powers Provision

Each of the environmental statutes provides the Administrator of the EPA with authority to take action in response to environmental emergencies. In several respects, the emergency authorities provided to the Administrator under §§ 504 and 311(e) of the CWA are more restrictive than those provided under the other statutes. The Administration supports revisions to the CWA emergency authorities that incorporate the provisions from the other statutes. The amendments to the emergency powers provision at § 504 of the CWA proposed in S. 1114 largely meet the Agency's concerns. S. 1114 does not address the provision at § 311(e) of the CWA. S. 1114 also does not provide judicial or administrative penalties for violations of emergency orders.

EPA's most significant concerns with the CWA emergency powers provisions are that:

- § 504 does not provide EPA with the authority provided under other environmental statutes to issue enforceable emergency orders; rather, the Administrator must initiate an action in Federal court. While we support preserving emergency order enforcement authority in Federal district court, the process of initiating a court action is cumbersome and may be inadequate for responding to emergency situations;
- Present law does not explicitly provide EPA with the authority to initiate an emergency action in response to a threat posed to the environment (the current CWA emergency provision authorizes an action based primarily on threats to the public health and the welfare);
- We would also ask the Congress to clarify the law to allow EPA to invoke the CWA § 504 emergency provision of the Act when the discharge from a pollutant source "may present" an imminent and substantial endangerment even when it is not currently presenting such an endangerment. Other statutes' emergency

provisions, such as § 7003 of the RCRA, have been amended to allow an action where the pollution "may present" an endangerment. § 504 of the CWA currently allows an action only where the pollution "is presenting" an endangerment to human health or welfare;

- We also believe that the Act should explicitly provide that the emergency powers provision applies to any person, not just to those presently identified in §§ 504 and 311(e). In many instances, the source of the pollution causing the endangerment may be other than those specifically identified.
- We support allowing citizens to bring actions to address imminent and substantial endangerments.
- We favor judicial and/or administrative penalties for violations of emergency orders.

The Administration supports amending the CWA to adopt these elements that will assure the public that the Agency can respond to emergency situations in the water context as effectively as we are able in under the other environmental statutes.

9. Minimum Penalties

At present, the CWA does not establish a minimum penalty amount a court or a hearing officer must impose upon a person found liable for violations of the Act. The Act requires that the court or hearing officer consider certain factors that are set out in the statute, including any economic savings that accrued to the violator, any history of violations, good faith on the part of the violator, and the seriousness of the violations, but does not expressly state any minimum amount that must be imposed. We recommend that Congress amend the penalty provisions of the Act to require the imposition of a penalty of the economic benefit that accrued to the violator. We would suggest that a narrow exception to this rule be established, for extraordinary circumstances, including in appropriate cases, economic hardship, based on the violator's ability to pay the penalty.

Establishing a minimum penalty of economic benefit ensures that violators do not profit from their failure to install the necessary pollution control equipment that would have enabled them to comply with the Act. Economic benefit is typically calculated by determining the savings a defendant realized by delaying capital expenditures and avoiding operation and maintenance expenditures that would have been necessary for the violator to have complied. By assuring the imposition of a penalty of at least economic benefit, we will assure that this violator is not better off for having violated the Act, and consequently, not realizing an advantage relative to others in the same industry that made the necessary expenditures and complied with the Act.

The recovery of a penalty of at least economic benefit is fundamental to the Agency's approach to resolving its enforcement action. This approach should be made expressly applicable to the courts and hearing officers as well. S. 1114 does not address the issue of minimum penalties under the Act.

10. Environmental Audits

In 1986, EPA issued an Environmental Auditing Policy statement in which the Agency acknowledged the value of environmental auditing ". . . by regulated entities to help achieve and maintain compliance with environmental laws and regulations, as well as to help identify and correct unregulated environmental hazards." This document also suggested the use of environmental audits in the enforcement context. Also in 1986, EPA's Office of Enforcement issued guidance on the inclusion of environmental auditing provisions in enforcement settlements. EPA has continued to consider the appropriate use of environmental auditing for enforcement purposes. The possible uses of these audits are many, but in the enforcement context the Agency has identified two uses that would prove extremely valuable. First, environmental audits may be used to determine the causes of CWA non-compliance. In many federal CWA enforcement actions, EPA has successfully negotiated environmental audits of the defendants facility as a term of settlement. These audits are generally intended to determine the causes of the past non-compliance and to assure that the means are identified and implemented to assure future compliance. EPA has also examined the potential for auditing to be used as a tool for identifying opportunities for pollution prevention. In this context, the audit would be used to identify opportunities for pollution prevention within production and treatment processes and operation and maintenance practices at the facility.

11. Civil Injunctive Relief

Under the enforcement authorities of the CWA, the United States and citizens are authorized to seek injunctions to redress violations of the Act. Given the structure of the enforcement provisions of the Act, however, we would recommend clarifying this authority. Specifically, we would recommend enumerating in the statute itself the scope or nature of the measures that a court may order in an injunction to remedy environmental harm. The United States takes the position that a court may order the discharger to undertake all necessary measures designed to bring the facility or sin into compliance and to remedy the harm caused by a violation. This position could be strengthened if the CWA provisions authorizing courts to issue injunctions were more specific on this point. We suggest amending these injunctive relief provisions to specifically authorize courts to order clean-up of environmental harm caused by violations, and include examples such as removal of contaminated sediments.

S. 1114 provides for restoration by injunction of natural resources damaged by pollution. We support this concept but are concerned by the proposal in this bill that could set an artificially low dollar cap on the cost of restoration that a court may order equal to the maximum CWA civil penalty that may be awarded. It is our view that the cap should be at least the total cost of restoration plus up to the maximum civil penalty. Also, we recommend clarifying language in the bill that these provisions do not in any way affect the existing authority of EPA and the Corps to obtain restoration in response to violations.

12. Supplemental Environmental Projects

EPA supports amendments to the CWA which would clarify that courts and the Agency have authority to approve Supplemental Environmental Projects, projects negotiated as terms of settlement of a CWA enforcement action that are intended to benefit the environment. It is also our position that these projects should be allowed only upon the consent of the parties, and that in any case a substantial civil or administrative penalty be paid of at least the amount of economic benefit obtained before a project is allowed. We also suggest that any provision for supplemental environmental projects (SEPs) written into the statute require a "nexus" between the violation and the SEP, while not unduly restricting the scope of SEPs. S. 1114 includes provisions which authorize court's to impose SEPs in both Federal and citizen enforcement actions. Our goal with SEP's is to promote pollution prevention. We support modifying this provision so that courts are authorized only to approve consent judgments that contain SEP's, not to order them directly and not to unduly tighten the nexus requirement, precluding SEPs involving public awareness projects, environmental auditing projects, and projects that would address similar violations at other facilities or sites owned by the company, or environmental problems at the violating facility in different media.

13. Information Gathering Authorities

As provided for in S. 1114, we concur in expanding EPA's information gathering authority under § 308 of the CWA to make express the Agency's authority to obtain information from all persons who are or may be subject to regulation under the CWA, not just "the owner or operator of any point source." The Agency regulates many entities that are not point sources from whom we need to obtain information. The most glaring examples are industries that do not discharge wastewaters and therefore have achieved the zero discharge goal of the Act, and industries that discharge their wastewater to a POTW rather than to surface waters. While we believe these sources are subject to the information gathering authorities of the Act, these entities could claim that they are not point source dischargers. Our need for information concerning these entities treatment processes and compliance status is no less than for other dischargers.

We also agree with the provision in S. 1114 that would amend the Act to increase the Administrator's subpoena authority to cover any person who is or may be subject to regulation under the Act and to require such persons to give testimony or produce documentation. This provision is particularly necessary, as the scope of the CWA is broadened beyond traditional point source permittees to include other pollution sources.

14. Nonpoint Sources

Carol Browner testified before this subcommittee that one of our guiding principles for crafting a strengthened nonpoint source program should be to continue to focus on voluntary, targeted approaches supplemented by backup enforceable requirements to be triggered when necessary. We are now examining a range of mech-

anisms, including backup federal enforcement, which may address my concerns in this regard, and we look forward to working with the subcommittee members and staff to find the best solutions.

CONCLUSION

In large measure, the success of the CWA is attributable to a scheme that lends itself to simple, straightforward, reasonable enforcement, and to both strong and fair Federal, State and citizen enforcement provisions that effectively deter would-be violators. This success is also attributable, of course, to an increasingly effective CWA enforcement program at the EPA.

The improvements to the enforcement provisions that have been made by previous amendments to and reauthorizations of the statute have enhanced the Agency's ability to undertake a fair and effective enforcement effort. The amendments made in 1987, particularly the creation of an administrative enforcement scheme and an increase in the civil penalty amount from \$10,000 per day to \$25,000 per day, and the addition of felony sanctions for criminal violations, greatly increased our ability to deter violators. Adoption of the suggestions outlined above as amendments to the CWA would again improve our enforcement capabilities and assist us in doing the best job we can with the limited resources we have. The amendments we support also provide fundamental procedural safeguards to potential defendants.

I appreciate having had this opportunity to present the Agency's views on enforcement to you, Mr. Chairman and Members of this subcommittee, and I look forward to working closely with you in the upcoming months to meet the challenge of reauthorizing an improved CWA.

RESPONSES FROM MR. HERMAN FOR ADDITIONAL INFORMATION

QUESTION:

Do we have enough data now to be able to identify the state of impairment of watersheds, and therefore be able to pursue the kind of prioritization of efforts that this legislation will call for?

ANSWER:

Being able to establish priorities for watershed protection programs is an important first step. In some cases, States and federal agencies do have the information needed. However, in a number of areas we do not have adequate, consistent information. Federal agencies and the States invest considerable resources in monitoring water quality. However, we have not yet developed ways to ensure that all these monitoring efforts complement one another to produce a consistent national picture of watershed protection needs. Moreover, within and among States, some have consistent State-wide monitoring efforts, while others do not. To address these and other monitoring coordination needs, U.S. Environmental Protection Agency (EPA), the U.S. Geological Survey (USGS), other relevant federal agencies and a number of State representatives have formed an Intergovernmental Task Force on Monitoring Water Quality, which will be making recommendations over the next two years on ways to better coordinate on-going monitoring. Until this is done, prioritization of efforts under the new watershed Initiative, based on assessing where needs and opportunities are greatest, cannot be entirely consistent across the country as a whole, or within those States that currently lack consistent State-wide water quality assessment efforts.

Various sections of the Clean Water Act require States to report information needed in Watershed Management, and the EPA has consistently refined its guidance and procedures for these reports. We need to continue to refine our information to reflect recent monitoring efforts and to fill in the data gaps to satisfy our most current assessment techniques such as those needed for better aquatic biological assessments.

Briefly described below is the current status of some of the data available to watershed managers, and the efforts to provide refined or additional data:

- Several major data bases such as EPA's STORET and NWIS-II program of the USGS have considerable historical water quality data. Both of these systems are being modernized, with a key goal of being able to share information easily. These data are critical to watershed managers as they define workplans, identify impaired areas, and set priorities. EPA is working with other agencies to ensure that additional water data bases, such as those of the National Oceanic and Atmospheric Administration (NOAA), and the Fish and Wildlife Service and EPA's Environmental Monitoring and Assessment Program (EMAP) also contribute data to Watershed Management efforts.

- EPA's Waterbody System contains State assessment data—that is information about the impairment of waterbodies and whether they are meeting the uses designated by the States. (STORET contains the actual water quality data, the Waterbody System facilitates the interpretation of that data against existing State standards). EPA has been working with States to “georeference” their waterbodies so the Waterbody System can give not only information about how many waterbodies meet standards (which it can do now) but identify which actual waterbodies fall into various use attainment categories. This is critical for watershed managers and should be done over the next year. Most States have this site-specific information available, but it is not now stored in a nationally-available system.
- The USGS conducts the National Water Quality Assessment (NAWQA) Program. The goals of the program are to: (1) describe the status and trends in the quality of a large representative part of the Nation's surface and ground water resources, and (2) develop an understanding of the natural and human factors affecting the quality of these resources. This information, obtained on a continuing basis, will provide sound nationally-consistent water-quality information on which water resources decision-making at all governmental levels can be based. To meet its goals, the program will integrate water-quality information at local, regional, and national scales.
- Newer data techniques such as remote sensing and aerial photography provide data, though in many cases not on a watershed managers. Several agencies including EPA's EMAP, USGS, Fish and Wildlife Service have combined funding to buy detailed thematic mapper data for the entire country which they can then share and make available to others as allowable.
- EPA is working to make available other “backbone data” that watershed managers, and indeed, any water quality managers need to implement their programs. These backbone data include:
 - A taxonomy system, which will organize the scientific names of taxa for consistent use in inventories, is being implemented through the joint efforts of NOAA, Biological Survey is seriously considering using the system, and additional agencies and States, will be urged to use it as well.
 - Further specificity for Unit Codes (HUC), effort which EPA is supporting, to break the existing codes into smaller units, which will be of great help to watershed managers. Many watersheds are identified on a hydrologic unit basis.
 - Reach File 3, which EPA developed using USGS maps that depicts in detail the waters of the country. EPA, USGS, and States are working to jointly maintain and refine this data as necessary.

QUESTION:

Do you have any comments, either for today of for supplementation, on how the reauthorization of the Clean Water Act could facilitate advancing our ability to be able to get the kind of information that this new approach of Watershed Planning will require?

ANSWER:

The major reason we are moving to the watershed approach is that we must begin to tailor our management to the needs of specific watersheds. This will, as you have noted, require more information than we have needed in the past. The information management tools that EPA, after conferring with other federal agencies, can provide include criteria that can be used to help determine watershed targets, data standards to promote the collection and reporting of high quality data, and, in some cases, tools for its analysis.

The Clean Water Act currently provides for development of criteria for water and sediment quality by EPA. Other federal agencies can provide comments to EPA when EPA develops these criteria. These criteria will be central to watershed plans in the future. The pollutant concentrations and interrelationships reflected in criteria need to expand to guide the judgments of watershed managers. A specific example of additional need is the area of biological criteria. Criteria are being developed as we learn more about how to frame them. While much needs to be done in this regard, the Clean Water Act already gives EPA adequate authority for this work.

Data standards are being developed through a variety of mechanisms in conjunction with other federal agencies and States, local agencies and Indian Tribes through mechanisms that the administration has put into place to improve inter-governmental coordination.

Better watershed-based information collection and reporting will need these improved standards, but we must also strengthen State programs, and consolidate the process used to report water quality.

Stronger and more comparable State data would allow better assessment of trends in ambient water quality, better assessment of the effectiveness of water quality programs, and better targeting of waters needing attention for remediation or preservation. We believe that the Clean Water Act should direct EPA to work closely with the States and other federal agencies to ensure effective minimum monitoring and reporting requirements.

As we integrate EPA and State programs in support of a watershed approach, it is essential to have a single consistent and consolidated process to report water quality status of all waters, identify problem areas, set priorities for management, and identify areas which are not being comprehensively monitored. States and EPA should be encouraged to use data of acceptable quality from federal agencies and other data collectors such as municipalities, dischargers, and volunteer monitoring groups in this inventory. A single consistent and consolidated inventory would also enhance the Public's ability to participate and facilitate EPA review and approval of water quality programs.

TESTIMONY OF ROGER J. MARZULLA, PARTNER, AKIN, GUMP, STRAUSS,
HAUER & FELD, WASHINGTON, DC

Mr. Chairman and members of the Committee:

I am pleased to accept this subcommittee's invitation to discuss the enforcement provisions of the proposed Federal Water Pollution Prevention and Control Act of 1993, S. 1114. I offer to this Committee a perspective gained over many years as both a government attorney responsible for prosecuting such cases, and as a private attorney defending them. From 1983 to 1989 I served in the Environment and Natural Resources Division of the U.S. Department of Justice, heading the division from 1987-1989. While at the Department of Justice, I personally prosecuted and defended several Clean Water Act cases (including citizens suits), and was responsible for overall enforcement strategy under the Clean Water Act (as well as the other major, environmental statutes). Now, as head of the environmental law section in the Washington office of Akin, Gump, Strauss, Hauer and Feld, L.L.P., I defend such cases brought against my clients. My experience also includes litigation of civil and criminal enforcement cases, and the defense of citizens suits brought under all of the other major federal environmental statutes.

Success of the Clean Water Act

The dramatic improvement in the quality of our nation's waterways, lakes and coastlines over the past 20 years qualifies the Clean Water Act as perhaps the most successful of our nation's environmental statutes. The rates of compliance with statutory requirements are high, due in no small part to the deterrent effect of the federal clean water enforcement program. The existing enforcement provisions of the Clean Water Act have enabled the United States to impose significant monetary penalties that far outweigh the economic benefit of noncompliance, to obtain injunctive relief that ensures future compliance, and to sanction habitual non-compliers by disqualifying them from obtaining government contracts and other benefits. The enforcement provisions of the Act have enabled EPA and the Department of Justice to institute coordinated nationwide and regional initiatives to address stubborn areas of noncompliance: metal finishers, combined sewer overflows, industrial pretreatment and municipal sewage treatment, to name a few.

This is not to say that no improvement of the enforcement provisions can be made; however, such changes must be made very carefully to avoid injuring an enforcement system that has to date performed well.

Administrative Enforcement

Increasing the maximum allowable administrative penalties and field citations will enable EPA to address the myriad of minor technical violations of the Clean Water Act expeditiously. The heart of the Clean Water Act enforcement program is the requirement that a permittee perform self-monitoring and self-reporting of violations, leaving only the issue of penalty to be decided. Where those violations have a negligible effect on the environment and are not persistent, the enforcement program is best served by the informal processes of field citation or administrative penalty assessment. This streamlined enforcement program for minor offenses frees investigators and enforcement attorneys to concentrate upon major violations, while

increasing substantially the number of minor violations that the Agency is able to address. Industry and municipalities, too, avoid the substantial costs of lawyers and litigation by bringing minor violations to resolution promptly and informally through direct discussions with EPA.

Citizens suits: Abuse and Misdirection

The citizens suit provisions of the Act (section 505) have, in contrast, encouraged misuse which has diverted the attention and resources of both the government and private industry from critical water pollution priorities. Section 505 creates significant financial incentives for the bringing of actions based upon technical violations whose impact on the environment is negligible. Those incentives include:

- Substantial awards of attorneys' fees at rates charged by major law firms even where the case is prosecuted by modestly-compensated environmental group lawyers;
- The diversion of penalty amounts into "environmentally beneficial projects," often benefiting the plaintiffs in the lawsuit directly or indirectly.
- Recordkeeping and strict liability provisions, insuring that the plaintiff has won the case before it is filed and requiring very little work to prepare and prosecute.

The majority of these cases are brought against industrial facilities (usually large companies) who have self-reported permit violations, so that the only issue is the appropriate amount of penalty. Industry, anxious to resolve the case, usually negotiates a generous attorneys' fee award to the plaintiff group, together with a significant reduction in penalties payable to the U.S. Treasury in return for an "environmentally beneficial project" frequently an outright monetary contribution to a designated group or university" chosen by the plaintiff. In recognition of this abuse, Congress in 1987 amended the Clean Water Act to require that proposed consent decrees in Clean Water Act citizens suits be submitted to the Department of Justice for review forty-five days prior to court approval (FWPCA § 505(c)(3), 33 U.S.C. § 1365).

Such citizens suits divert substantial resources (both private and governmental) from addressing true water pollution priorities. First, the threat that the case will be brought as a citizens suit if the government does not bring it as an enforcement action tempts EPA to dedicate scarce enforcement resources to actions it might otherwise not bring, since EPA knows that it will suffer embarrassment and lose much of the penalty if the citizens group brings the case instead. Second, private financial resources (often in the millions of dollars) are spent on these suits rather than addressing more pressing environmental concerns. Third, the incentive for industry is to "pay off" the plaintiffs and resolve the litigation even where this leaves pollution control problems inadequately addressed. Fourth, EPA and the Department of Justice must invest substantial personnel resources in reviewing these cases and, on occasion, objecting to proposed consent decrees which violate government policies and priorities.

Finally, and most importantly, citizens suits pull against government priorities and enforcement strategies. By definition, a citizens suit is a claim of violation of the Clean Water Act which, in the opinion of EPA, did not merit filing. Out of many thousands of potential cases, the government must choose those best aimed at achieving and maintaining the integrity of our nation's waters, and at deterring violations by others. The citizens suit provision authorizes the bringing of cases which do not fit into this enforcement strategy and which, in many instances, detract from it. The large environmental groups who bring the vast majority of these cases—Sierra Club, NRDC, PIRG, and Atlantic States Legal Foundation—have their own environmental agenda different from that of the government, which they attempt to implement as "private attorneys general." The result is like several horses each trying to pull the carriage in a different direction—and that direction is not the one carefully mapped out by EPA and the Department of Justice pursuant to the direction of Congress and answerable to the public. A consequent jumble of priorities, strategies and inconsistent resolutions characterize the history of the Clean Water Act's citizens suit docket.

The Clean Water Act's citizens suit experience is not unique among environmental statutes. To avoid precisely this kind of disruption in the government's program, Congress adopted section 113(j) of the Superfund Amendments and Reauthorization Act of 1986, depriving federal district courts of jurisdiction over Superfund citizens suits brought while a remedial action is in progress. This subcommittee may wish to consider similar restrictions upon the unbridled bringing of Clean Water Act citizens suits.

The "Gwaltney Fix"

An excellent example of this misdirection of enforcement policy and misallocation of resources is the proposed revision to the citizen suit provision of the Clean Water Act to permit the bringing of actions based wholly upon passed violations which have ceased and are not likely to be repeated in the future. Of course, in such cases the federal or state government has complete authority to recover penalties. However, where the government has declined to pursue such a case, little reason appears for allowing a private party to bring the action.

First, the case raises significant constitutional issues under the Article III "Case or Controversy" clause of the U.S. Constitution. Where the violation exists entirely in the past and the only remedy sought by the plaintiff is a penalty payable to the U.S. Treasury, there would appear to be no injury to the plaintiff redressable by the federal district court. In contrast to a case involving current or threatened violations which may be abated by injunctive relief, such a "passed penalties only" case is moot, and the plaintiff lacks standing to pursue this presently nonexistent discharge in federal court. Second, such cases are a vivid example of citizens suits which divert resources and energy from legitimate environmental priorities, serving principally as a vehicle for enriching the plaintiff group. Where the cause of the violation no longer exists because the permittee has remedied it, and where the government has declined for good reason to prosecute the case itself, there exists small reason for a private party to bring the case other than to profit from the substantial attorneys' fees and diversion of penalties into an "environmentally beneficial project."

Although the abatement of current or threatened violations of the Clean Water Act may be said to legitimately support a citizens suit, the filing of a "passed penalties" case (forbidden by the Supreme Court's Gwaltney decision) vindicates no legitimate environmental protection objective. Accordingly, a provision allowing such suits should not be adopted by Congress.

"Environmentally Beneficial Projects" Should Not Be Authorized

The Clean Water Act authorizes the recovery of civil penalties of up to \$25,000 per day for each violation of the Act, together with injunctive relief to abate the violation. The Act does not authorize the diversion of these penalties from the U.S. Treasury to privately-run activities or projects. Allowing a plaintiff group to trade-off funds owing to the U.S. government in the form of penalties in return for defendant's contribution of funds or property to an activity of the plaintiff group's choosing is poor policy which is ripe for abuse.

First, the diversion of tens of millions of dollars per year in funds otherwise payable to the U.S. Treasury in the form of Clean Water Act penalties undercuts our nation's efforts to resolve its serious budgetary problems. For this reason, Congress, in the 1990 Clean Air Act amendments limited such "environmentally beneficial projects" to a maximum of \$100,000.

Second, "environmentally beneficial projects" minimize the financial sting intended by Congress' authorization of stiff civil penalties. Companies often enthusiastically agree to perform improvements on their own facilities, donate property for parks or refuges, or make financial donations to environmental groups in return for the groups' agreement to give away penalties otherwise owed to the U.S. Treasury. The company often gains a tax deduction and the ability to tout its environmental sensitivity, while avoiding significant cash outlays for penalty payments.

Third, such projects represent the whim of the individual or group bringing the action, disconnected from legitimate public policy considerations. At a minimum, Congress should require some nexus between the violation and the project to ensure that large sums are not wasted on useless or foolish undertakings.

In short, since environmentally beneficial projects often represent "hobby horses" of those bringing the suit, they should be discouraged. Since the true purpose of penalties is to punish violators of the Clean Water Act, using the threat of such penalties to obtain funding for pet projects undercuts rather than serves the fundamental deterrent function of the enforcement provisions.

Natural Resource Restoration: A Black Hole

The bill's provisions for injunctive authority to restore natural resources raise the specter of another Superfund debacle clothed in Clean Water Act provisions. The historic power of the federal government to obtain remediation of contaminated sediments, shellfish beds, marshes, injured vegetation, wetlands and similar environmental damage has proved quite sufficient over the years. No reason exists for creating a sweeping and nebulous new authority, devoid of standards or legislative purposes.

First, the natural resources restoration provision, section S. 1114, § 503, contains no requirement for regulations defining the damage to be remedied, or the process by which the damage is to be assessed. Statutes such as CERCLA, MPRSA and the Oil Pollution Act contain carefully structured processes, and definitions for defining natural resource damages which must be remedied.

Second, the bill contains no liability standards or burden of proof. It could be read to suggest that an injunction may be obtained requiring a single violator to restore an entire lake, marsh, or riverine system, without contribution from other polluters of the same aquatic system. It might also be read to authorize vast actions against thousands of non-point sources (e.g., farmers or homeowners) to require restoration of aquatic ecosystems such as the everglades.

Third, the inclusion of such language would appear to call into question existing governmental authority (successfully used for the past two decades) to require clean-up directly traceable to the violator.

Fourth, the provision's lack of specificity portends years of litigation (similar to that surrounding CERCLA) in which issues such as joint and several liability, strict liability, definition of "natural resources" and definition of "restoration" are fleshed out at huge expense in time and litigation costs over several years.

In short, current authority is entirely adequate. Adding the natural resources restoration provision will only confuse the program without providing any benefit.

Other Issues

Finally, I would address briefly three additional issues:

(1) *Black listing.* The bill would disqualify from government contracting any company convicted of a single criminal violation or three civil violations of the Clean Water Act. Such automatic disqualification would capture a company which was merely negligent, or even a non-negligent company held liable for a strict liability violation of the Clean Water Act which is, nevertheless, criminal (S. 1114 § 503). Disqualification from government contracting (which may be tantamount to bankrupting a company dependent upon government contracts) should not occur on the basis of an unpermitted discharge that was unintentional and, in effect accidental.

(2) *Upset provisions.* S. 1114, § 593 would require that an upset (i.e., an unintended malfunction of the waste water treatment system) be treated as a violation of all of the parameters of the permit rather than as a single violation of the permit. Since each violation is punishable at up to \$25,000 per day, and a permit may easily include a dozen or more parameters, the daily penalty in such an accidental upset case could be astronomical. There appears no good reason for changing existing law.

(3) *Criminal enforcement.* The Clean Water Act provides insufficient guidance regarding what is criminal and what is not. In addition to the strict liability and negligence crimes discussed above, the Act provides essentially that any violation of the permit requirements may be prosecuted criminally. In the context of wetlands prosecutions especially, this statute has provided prosecutors with no guidance whatever regarding those acts which Congress deems sufficiently egregious to be prosecuted criminally and those acts which are merely punishable by a fine. Congress should undertake a better definition of criminal activity so as to avoid uncertainty and arbitrariness.

In conclusion, I appreciate the Subcommittee's invitation to testify today, and I would be happy to respond to any questions.

STATEMENT BY ADRIAN FREUND, DIRECTOR OF THE LOUISVILLE-JEFFERSON COUNTY DEPARTMENT OF PLANNING AND ENVIRONMENTAL MANAGEMENT

Chairman Applegate and distinguished members of the Subcommittee on Water Resources of the House Committee on Public Works and Transportation. I am Adrian Freund, Director of the Louisville-Jefferson County Department of Planning and Environmental Management in Louisville, Kentucky. Prior to assuming my present position in July 1992, I served as Chief of Water Management for the Connecticut Department of Environmental Protection. I have 21 years of experience in urban and regional planning, environmental planning and environmental management, with a concentration in water quality management. I hold a Bachelor's degree in Urban and Regional Planning from the University of Illinois.

On behalf of the American Planning Association (APA), I am here today to present the Association's views on reauthorization of the Clean Water Act. I respectfully request that the complete text of my statement be included in the official hearing record.

APA is a national public interest and professional organization consisting of public and private planners, elected and appointed officials at all levels of government, as well as educators, students and interested citizens. Our 28,000 members belong to 45 chapters covering every state and Congressional district.

APA was formed in 1978 when the American Institute of Planners, established in 1917, and the American Society of Planning Officials, founded in 1934, were consolidated. The Association's primary objective is to advance the art and science of planning for the improved development of the nation and its communities, states and regions, as well as to preserve its valuable natural resources. Within APA is the American Institute of Certified Planners (AICP) which focuses on professional development.

The American Planning Association and its 28,000 members have a great interest in the wise protection of our nation's water resources. Our testimony is based, in part, on APA's adopted policy on Environmental Quality. APA has also developed policies on: Comprehensive Surface Water Management, Groundwater Quality and Quantity Protection; and Wetlands. APA's policy on Environmental Quality seeks to achieve:

- the conservation of non-renewable resources—such as mineral petroleum and agricultural lands—and the protection of renewable natural resources, such as surface and groundwater, air, topsoil, forests, and fisheries from further degradation or destruction.
- the integration of environmental protection and environmental policies and programs into comprehensive and functional planning and implementation programs at all levels of government throughout the nation.
- special protection for sensitive areas: wetlands; floodplains; areas supporting unique or endangered plant and animal species; sites of special scenic, historical, and archaeological significance; and lands or waters that would lose their value or be permanently impaired by human changes.

Specifically, in relation to water, APA's adopted policies include the following provisions:

1. Areawide planning and implementation of water quality management and water supply are critic. Federal funds should be provided to regularly update areawide plans. Because waters are not confined by local, state, or national boundaries, purely local efforts to improve water quality and/or supply are ineffective.

2. Federal funding for the construction and upgrading of publicly owned wastewater treatment plants must be continued. Publicly owned plants often support new growth and development and their construction provides jobs. Unlike scattered, private wastewater plants, public facilities often reinforce centralized growth and in fill, and prevent urban sprawl and water quality degradation. Furthermore, Federal construction funds should be consistent with areawide water quality plans which stipulate that any new growth and development to be served is necessary and environmentally sensitive.

3. Data collection and analysis of existing conditions should be supported by federal funds. There can be no sound decision on how to maintain and enhance water quality and supply without adequate data collection and analysis. Locally funded monitoring programs fail due to competition for scarce resources.

4. Federal funds should be available to small and financially-strapped communities to avoid geographic inequities and to prevent economic hardship. Areas of the nation with exceptionally sensitive bodies of water, large concentrations of waste producing industry, or large low-income populations should not suffer diminished environmental quality because of an inability to pay.

5. Research on the effects and magnitude of nonpoint source pollution and the effectiveness of control strategies should be continued. The Section 319 program should be expanded beyond demonstration. Integrated Watershed Planning approaches to point and nonpoint source control should be promoted. Proposed projects and land use activities should be evaluated for their contribution to nonpoint source pollution; and efforts to minimize adverse effects should be encouraged.

A Planning Perspective on the Clean Water Act

Two years ago, the American Planning Association came before your Subcommittee to present a planning perspective on the Clean Water Act reauthorization. In our testimony, we stressed four basic premises that underlie our positions on the Clean Water Act and our adopted policies on water management. Those premises, equally valid today, are:

1. Water quality is fundamentally related to land use and land management.

The business of planners and planning is to apply foresight to the way land is used and managed. Increasingly, environmental protection is an integral part of the

process of developing comprehensive plans at all levels of government. Our communities' use of land directly impacts water quality. Some impacts come from point sources while others come from broadly dispersed or "nonpoint" sources. Land use planning is undertaken by nearly all units of government and used to establish the basis for zoning and development regulations. Increasingly, infrastructure investments in wastewater facilities are used as a tool to help shape and guide urban growth and reduce the negative impacts of urbanization on water quality.

2. Efforts to clean up polluted water require extensive capital investments.

Long-range capital planning of at least five to six years is needed at every level of government. Stable funding of infrastructure programs at the federal level is essential to secure large and stable capital commitments from state and local governments.

The benefits of local and regional clean water accrue to the nation as a whole. Financing of water management facilities and programs is a federal as well as local and state responsibility. The state revolving fund (SRF) program has been highly successful in stimulating the construction of new facilities to attack water pollution. Without the SRF, state and local governments could not afford to make the massive investments required to achieve water quality standards. The 1987 Clean Water Act Amendments introduced nonpoint sources, combined sewer overflows, sludge management, stormwater and toxics as new needs to be addressed by the states. Addressing these problems will require large new capital investments throughout the next two decades. Stable federal funding is essential.

3. Water quality and water quantity are directly interrelated. Water quality is irrevocably tied to the amount of clean water available for drinking, industrial and agricultural uses.

Polluted water is not readily available for drinking and must often be subjected to costly treatment processes to make it suitable even for industrial and other uses. Since surface and groundwater are closely interrelated, the quality and quantity of groundwater can directly impact surface water as springs feed the streams and rivers, especially in time of drought. Surface and groundwater withdrawals for consumptive use reduce flows in rivers and streams and may seriously compromise the achievement of aquatic life and recreational use goals in large areas of the nation.

4. Wetlands in their natural state perform ecological functions that are impossible or costly to replace and are vitally important to the environment and economic health of the nation.

Wetlands protect the quality of surface waters by retarding the erosive forces of moving water, and by intercepting and reducing waterborne sediments, excess nutrients, heavy metals and other pollutants. Several states in our nation have developed outstanding wetland protection programs that recognize the critical functions that wetlands play in maintaining water quality and providing habitat for wetland dependent and transitional plant and animal species. Wetlands protection is a fundamental land use management function in which the federal government must provide leadership. State and local governments must play supporting roles.

Last year, APA came before this Subcommittee to testify on the merits of H.R. 5070, the "DeLauro-Lowey Water Pollution Control and Estuary Restoration Financing Act." In our testimony, we noted that the outstanding work of your esteemed colleagues offered an opportunity to better integrate planning and development decisions at an ecosystem or "bioregional" level. Commenting on the work of Representatives DeLauro and Lowey in a recent letter to APA, Majority Whip David E. Bonior noted that the "Congresswomen . . . recognized early that careful planning can help to maximize the environmental and economic benefits of expenditures on environmental infrastructure." Congressman Bonior, commenting on Congresswomen DeLauro and Lowey's recent efforts to develop a strategy for expediting infrastructure funding, notes that the proposal "will focus on giving priority to projects that emerge from sound planning efforts.

President Clinton's budget contains a major economic stimulus package that focuses on infrastructure investments as a way to create jobs, promote economic development and meet environmental goals. Those projects that are "ready to go" under the administration's program will undoubtedly be the same projects that have benefited from careful planning.

The Merits of a Watershed Planning Approach

There are many signs that the benefits of sound planning are becoming more widely recognized. The National Estuary Program requires "Comprehensive Conservation and Management Plans" as a basis for making decisions about investments and regulatory programs that are needed to clean up waters of special national significance. Under Section 319 of the Clean Water Act, states create nonpoint source

management plans to establish priorities for investments in best management practices, land management programs and land use initiatives. Wastewater facilities plans have been part of the clean water vocabulary since the 1970's.

Throughout America, hundreds of watersheds provide examples of the application of planning approaches to watershed and water quality management. I have developed watershed programs in places as diverse as Austin, Texas; Madison, Wisconsin and the State of Connecticut. In my own area of Louisville and Jefferson County, Kentucky, a unique and sensitive watershed known as Floyds Fork has been protected from the pressures of urbanization. The Floyds Fork Program was led by David Armstrong, County Judge/Executive and uses zoning and development standards and policies to protect the character of the watershed and prevent water quality degradation.

In 1991, the State of North Carolina's developed a *Whole Basin Approach to Water Quality Management*. Throughout 1991 and 1992, state water managers, water interest groups, APA and several federal agencies began to focus upon the concept of a watershed basis or basin approach to water quality management as a new organizing framework for the Clean Water Act. Last week, over 900 persons participated in an EPA conference on the subject of Watershed Planning and management. Sound, integrated planning of ecosystems or "bioregions" is at the heart of the watershed approach.

The American Planning Association has developed a conceptual framework for a watershed approach to clean water (copy attached) and strongly supports the concept as a effective tool to coordinate and integrate the many programs required by the Clean Water Act National Pollutant Discharge Elimination Systems (NPDES) permitting, monitoring, water quality modeling, nonpoint source assessment, waste load allocation, best management practices and planning requirements can be integrated throughout a watershed. Water quality and aquatic resources can be assessed simultaneously throughout an entire river basin.

The benefits of whole basin or Watershed Planning and management fall into three major categories: (1) improved program efficiency, (2) increased clean water program effectiveness, and (3) consistency and equitability. By focusing on specific areas of concern each year, monitoring, modeling, and permitting efforts can be focused; as a result, more can be achieved for a given level of funding and resource allocation. The whole basin approach is consistent with basic ecological principles of Watershed Management, leading to more effective water quality assessment and management. Linkages between aquatic and terrestrial systems are addressed (e.g., contributions from nonpoint sources) and all inputs to aquatic systems, and potential interactive effects are considered.

Watershed Management will facilitate the incorporation of nonpoint source pollution assessment and controls, since these diffuse pollutant sources extend to the watershed boundaries and accumulate from a basin's headwaters to its mouth. Watershed plans will provide a focus for management decisions. By clearly defining long-term goals and approaches, these plans will encourage consistent decision-making. Consistency, together with greater attention to long-range planning, in turn will promote a more equitable distribution of the assimilative capacity of a water body, explicitly addressing the trade-offs among pollutant sources (point and nonpoint) and allowances for future growth.

North Carolina is but one of many states that are exploring or have implemented watershed-based water quality management programs. Currently, many of the Clean Water Act requirements for reporting and planning can be satisfied through a whole basin or Watershed Management approach. Some of the Clean Water Act requirements that could be more effectively addressed through a whole basin approach include:

- *Section 302—Water Quality based effluent limits.* Under a watershed approach, alternative effluent control strategies could include approaches such as assimilative capacity "banking."
- *Section 304(1)—Impaired Waters.* A watershed approach would include a comprehensive analysis of all the inputs to a watershed that may cause degradation. More objective priority setting and improved management strategies are the benefits.
- *Section 305(b)—Water Quality Inventory.* A comprehensive assessment of water quality in each watershed is generated through a whole basin approach.

Sections 201, 303, and 319 of the Clean Water Act require or strongly encourage a watershed approach to water quality management. However, a piecemeal approach to implementation of the Act, a fragmented approach to funding and grants and a variety of separate reporting requirements have discouraged states and localities from pursuing integrated watershed-wide approaches.

It is the position of the American Planning Association that barriers to carrying out watershed-based planning should be identified by Congress and removed during the reauthorization process.

Additional Recommendations for the Reauthorization

The American Planning Association has developed several additional recommendations for the reauthorization.

1. The planning process for controlling nonpoint source pollution needs to be improved.

We recommend consistency between local land use plans and state water quality plans including nonpoint source reduction. The federal nonpoint source program must shift its emphasis from demonstration to long term management of nonpoint sources.

The Clean Water Act should require that localities receiving or qualifying for federal assistance establish a nonpoint source management strategy. The statewide (Section 319) nonpoint source plans should reflect participation by regional planning agencies and local government in nonpoint source planning. The Act should either set forth in detail the criteria that the Environmental Protection Agency (EPA) must use in certifying that a state plan is adequate, or require EPA to promulgate regulations setting forth such detailed criteria. The program could follow the model established by the requirement for a coastal area water quality element in the Coastal Zone Management Act.

States should require regional agencies and local governments to certify that their existing plans are consistent with state nonpoint source management plans, or require regional and local governments to prepare and implement new nonpoint source management plans consistent with the state plan. States should certify to EPA that they have reviewed both regional and local plans and found them consistent with state plans. Consistency of federal projects should be required before capital improvement funds are released for major federal facilities, including federally assisted highway projects.

Congress should appropriate sufficient funds to allow EPA, states, and local governments to successfully administer the nonpoint source control program. Such administration should go beyond the current situation to anticipate meeting future needs.

Grants are also needed so the states and local governments can prepare and implement high quality nonpoint source reduction plans. The Section 319 nonpoint source program should emphasize institutionalizing nonpoint source control, as contrasted with the current focus on demonstration.

2. We support providing opportunities for joint management of ground and surface water supplies and believe that state water plus that address surface and groundwater quality and quantity should be required.

Federal grants are needed to fund research on strategies for joint management of ground and surface water that also integrate principles from the Safe Drinking Water Act. We need to start looking at the resource on an ecosystem basis.

The Clean Water Act should take first steps toward requiring state water plans that address surface and groundwater quality and quantity. The plans should provide for in-stream flow quality and quantity standards for the purpose of preserving and enhancing fish and aquatic life. The revised Act should also contain special provisions for ephemeral and intermittent watercourses with standards appropriately based on the sources of water.

Federal funding for any water project should be approved only when state water plans can demonstrate consistency with other state planning programs such as growth management, clean air and solid waste management. Local wastewater facility plans submitted to the state for funding under the state revolving fund must be consistent with local air, water, solid waste management and growth management plans (where they exist). Local land use planning needs to take into account water quality and quantity. The plans should guide development to be compatible with protection of recharge areas, conservation of aquatic habitats, surface water quality, stormwater runoff and take into account cumulative and synergistic effects.

3. The federal government should establish a long-range capital planning budget, at least five to six years in scope, as a basis for appropriating funds to the State Revolving Fund (SRF) for building and upgrading the many public works projects necessary to achieve the objectives of the Clean Water Act. For communities in economic hardship, additional SRF funds should be made available and payback periods should be extended.

The large unmet need for construction and upgrading of wastewater treatment plants requires additional investment by the federal government in the state revolving fund (SRF). The SRFs must also address new needs such as combined sewer correction, stormwater, nonpoint sources and sludge management. The federal government should give special consideration to assistance for public works projects that are included in adopted local and state capital improvement programs of state and local governments that are linked to longer-term state development plans and local comprehensive plans.

4. The State Revolving Fund (SRF) program should be continued at least through 1999, with federal capitalization funds of at least \$2 billion annually. Additional funding comprising a total of \$5 billion annually should be provided as part of an economic stimulus program targeted at infrastructure. The continuation of funding should address the unmet needs included in the 1987 Clean Water Amendments.

The 1987 Clean Water Act Amendments introduced nonpoint sources, combined sewer overflows, sludge management, stormwater and toxics as new capital needs to be addressed by the states. Continuation of capitalization grant appropriations at the current level of approximately \$2 billion annually through 1999 will allow SRFs to address many of these unmet needs mandated by the 1987 Act. Additional funds should be appropriated and any program that also addresses drinking water needs should be funded at levels of up to \$5 billion.

5. A goal of no overall net-loss of the nation's remaining wetlands resource base as defined by acreage, volume, location, type and function should be adopted. Where feasible, federal legislation should support actions to enhance, restore and create wetlands using a "partnership" approach that incorporates private stewardship and federal, state, and local cooperation.

APA supports language in the new Clean Water Act to protect wetlands and to promote the development of EPA-assisted, funded and approved comprehensive wetland management plans at the state, regional and local levels. These plans must ensure intergovernmental coordination and achieve the no net-loss goal. That also means that federal activities must be consistent with EPA-approved state and local wetland management plans.

We recommend allowing and encouraging states, regional and local government entities to assume responsibility for specific portions of the Section 404 program and other future legislated programs so long as they demonstrate a capacity to further the national goal of no-net loss and adopt approved state wetlands management plans. Local governments should be allowed more direct participation in both the regulation and management of wetlands based upon a clearly defined wetlands inventory and classification system.

We urge you to establish a comprehensive program that supports tax-based and other financial incentives to encourage landowners, land trusts, states, and local governments to protect wetlands, and provide funds for public and semi-public acquisition of wetlands in full or in part, as appropriate. Planning techniques such as cluster zoning and transfer of development rights and other innovative land use incentives need to be encouraged to accomplish the preservation of wetlands.

The Clean Water Act should encourage states and local governments to establish mitigation banks for unavoidable losses of wetlands. Federally funded projects, especially transportation facilities, including those funded by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), should be designed to avoid unnecessary wetland losses. Mitigation for unavoidable losses should be eligible for federal funds.

6. To further the intergovernmental partnership that implements the Clean Water Act, we support adequate federal funding for the states and local governments to carry out and manage significant new mandates.

States have a key role in the federal Clean Water strategy. States have carried out the basic requirements of the Act for nearly 20 years with considerable progress. Federal support of state program management, however, has dwindled in recent years, and states must now take on new responsibilities for stormwater permitting, nonpoint sources, toxics and other mandates of the 1987 Act.

The management needs of states are estimated to be at least \$700 million annually. Federal appropriations for Section 106 must be dramatically increased from their current level. Local governments also need more money and support from the federal government so they can carry out their role under the Clean Water Act as well.

CONCLUSION

Let me conclude by thanking the Chairman for inviting the American Planning Association to testify before your Subcommittee, thus providing the planning profes-

sion an opportunity to share with the Subcommittee our thoughts and expertise on the Clean Water Act. I would also like to recognize the Government Affairs staff of APA here in Washington, D.C. for their fine efforts in focusing greater attention on the importance of sound planning. We believe that the Congress can substantially improve the Clean Water Act by integrating the planning approaches advocated by APA into the Act.

Other recent models, such as the Intermodal Surface Transportation Efficiency Act (ISTEA), demonstrate the merits of a participatory, integrated federal/state/local planning partnership.

I would be more than happy to address any questions you may have.

WATERSHED BASIS FOR CLEAN WATER

Prepared for the American Planning Association, by Margot W. Garcia, PhD, AICP, Department of Urban Studies and Planning, Virginia Commonwealth University, in consultation with Charles Wolfe and Keene Callahan of Robinson & Cole, Hartford, Connecticut and Arlan Colton, State Land Department, Tucson, Arizona.

Despite massive efforts at point-source pollution control which has resulted in considerable improvement, the rivers and lakes of the United States still are not fishable and swimmable. Non-point source pollution from urban, agricultural and industrial runoff has become the greatest problem. The waterways and wetlands of our nation are an indispensable and irreplaceable but fragile natural resource with which the citizens of the nation have been endowed. These are an interrelated web of nature essential to an adequate supply of surface and groundwater; to hydrological stability and control of flooding and erosion; to the recharge and purification of groundwater; and to the existence of many forms of animal, aquatic and plant life.

The quality of our nation's water is a historical reflection of land uses which requires new and innovative solutions to address the problem. What follows is a conceptual model for watershed based planning and management to reach the nation's goal of the protection of the physical, biological and chemical integrity of our nation's waterways.

I. General Assumptions

- We need to approach this problem from a "systems" point of view, meaning dealing with the complete hydrologic system of precipitation, surface and groundwater, wetlands, lakes and ponds, and estuaries. The systems approach forms one of the references for planning and management.
- The definition of "clean" needs to come from a risk-based analysis.
- With very few exceptions, land use decisions have been historically made at the local level with active and informed citizen participation. This process is strongly supported by citizens.
- Definition and analysis of problems and forecasting of trends needs to be based on the best science available. A basic inventory of ecosystem characteristics and functions is essential as well.
- Water quality and water quantity are interrelated. Upstream activities determine the limits within which downstream activities may be carried out. The quantity of water cannot be divorced from quality for purposes of beneficial use, and quality is conditioned by the quantity available.
- In order to adopt and implement this "systems" approach, all the parties who will be affected need to be at the table to agree on the definition of the problem and to negotiate the strategies to resolve the issues identified.
- The Water Resources Planning Act of 1965 by creating a cooperative framework between the federal government, states, local governments and private enterprise established a Federal-State framework to manage and protect river basins. We need to build on that experience.
- While there is a need to establish institutions based on watershed or ecological boundaries, creating new governmental structures should be avoided. One way to avoid creating new structures is to modify existing ones.
- The existing point and nonpoint National Pollutant Discharge Elimination System (NPDES) permit system should stay in place. The Section 404 and 401 permits system of the Clean Water Act should be modified. Flexibility of these systems during transition to a watershed-based approach is necessary.

II. A Conceptual Framework

The watershed systems approach provides the basis to (1) analyze water quality and quantity problems, (2) implement land use and environmental planning strategies to overcome these problems, and (3) monitor the progress and success of the

watershed system approach in order to adjust the strategies as needed. To be effective and comprehensive, watershed boundaries would overlay existing political boundaries of states, counties and municipalities. These political jurisdictions within one watershed would need to work together under new institutional arrangements.

The watersheds systems approach is an attempt to achieve the goal of "fishable and swimmable" under the Clean Water Act.

The U.S. Geological Survey (USGS) has a system for classifying watersheds as they aggregate into larger systems, which was used in part by the Water Resources Council (WRC). There are 21 river basins in the U.S. which would report to EPA. The "river basins" would form the largest regional areas. Planning and coordinating of watershed plans would occur at this level. They would also be responsible for setting water quality standards and administering the NPDES permit system in accordance with approved watershed plans.

The next level of management or coordination of watershed activities would be "planning subregions." This is an area drained by a river system, a reach of a river and its tributaries in that reach, a closed basin(s) or a group of streams forming a coastal drainage area. The WRC had set up 222 of these planning subregions (later consolidated to 106 assessment subregions).

The "accounting unit" is nested within or equivalent to a planning subregion. It is used by the USGS for designing/managing the National Water Data network. The WRC had set up 352 accounting units. In a small riverine basin these might be equivalent to the planning subregions. This is the level that would be responsible for issuing Section 404 and 401 permits for development projects, making sure that the permit issuance is consistent with the metropolitan planning organization (MPO)/council of governments (COG)/hydroregion plan and its Best Management Practices (BMPs).

Representing part or all of a surface drainage basin, a combination of drainage basins or a distinct hydrologic feature is the local hydroregion. Called "cataloging unit" by the USGS, they have about 2100 of these areas and use them in acquiring and cataloging water data. In an effort not to create new layers of government, there should be an effort to use the MPOs or COGs in creating the local institution. One might need to adjust the boundaries of the MPOs or COGs to coincide with watershed boundaries. At this local level or MPO/COG/hydroregion is where the major planning and implementation of the strategies (including site-specific Best Management Practices) would occur.

Each watershed level river basin would have a citizen committee to guide the work and recommend policies. The committee would be made up of 20 percent industry representatives (including agricultural industry and agriculture), 20 percent environmentalists, 15 percent from the professional organizations, 15 percent academics, and 10 percent representing local governments, 10 percent from state government, and 10 percent from federal agencies. The actual size of the committee would depend on the size of the watershed and population of the area. The group would work by consensus and plenty of time to work through the issues would be allowed in building the plan. The membership of the MPO/COG/hydroregion citizen committee would be appointed by the MPO/COGs. The citizen committees for the unit and planning subregion would be made up of representatives from the MPO/COG/hydroregion citizen committee. The citizen committee for the riverine basin would be appointed by the governors of the states involved.

The local MPO/COG/hydroregion plan would be sent to the accounting unit group. That unit citizen committee would work to integrate the different plans coming from the local MPO/COG/hydroregion committees in their area. The unit citizen committee would negotiate with the local MPO/COG/hydroregion committees as well as among themselves to set consistent strategies to handle the identified problems and priorities for funding. The Unit plan would then be sent to the planning subregion citizen committee for similar action. Their plans would go to the riverine basin citizen committee for integration with the other planning subregion plans. The riverine citizen committee would negotiate with the planning subregion committees, as well as among themselves, to set consistent strategies to handle the identified problems and set priorities for funding. They would set the general policies and water quality standards that must be met for the entire riverine basin. The river basin plan must be approved by the U.S. Environmental Protection Agency.

Based on approved plans and priorities, budgets would be set and funding allocated for implementing the plans.

III. The Watershed Plan

The goal of each local MPO/COG/hydroregion, accounting unit, planning subregion and riverine watershed plan is to protect the physical, chemical and biological

integrity of the hydrologic system and to have all the waters of their watershed in fishable and swimmable condition.

A plan at the local MPO/COG/hydroregion must contain an inventory of the ecosystem, hydrologic system (lakes, ponds, springs, aquifers, streams, rivers, wetlands—tidal and non-tidal—and estuaries). Appropriate and defensible water quality standards will need to be developed based on the best scientific information available. The following topics need to be analyzed and strategies developed to overcome problems as defined in the plan:

- quality of surface and ground water
- quantity of surface and ground water
- assimilative capacity of streams and rivers in the area
- wastewater treatment facilities
- instream flow
- quality of drinking water
- flooding and floodplain management
- erosion and sedimentation
- reuse of treated effluent
- septic tank regulations
- dredging and dredged material disposal
- wetlands
- quality of bay, estuary and coastal waters
- drainage
- stormwater management
- urban and rural runoff, including agricultural and animal waste
- comprehensive plans, zoning ordinances, and subdivision regulations
- transportation plans
- injection and dry wells

The plan also needs to deal with water demand from the following sectors:

- domestic and commercial
- manufacturing
- energy production
- mineral production and mining
- agriculture and ranching
- recreation
- navigation
- fish and wildlife
- natural areas, historic and wilderness areas

The plan must include an implementation plan which will put in place procedures to ensure that local governments are following the practices outlined in an approved plan and that violators be prosecuted. Incentives for local implementation may also be beneficial.

The plan also needs to develop monitoring criteria that will assess the effectiveness of the strategies (including site-specific BMPs) adopted to resolve the problems. The plan must mandate consistency of city/county comprehensive or master plans, zoning ordinances, subdivision regulations and riparian/wetlands regulations within the MPO/COG/hydroregion boundaries—and therefore within the watershed.

The plan should be updated every five years.

Public workshops, education and hearings must be part of the planning process. Only through extensive public education and involvement, so that the consequences of everyone's individual and collective actions are understood, will there be progress in cleaning up our water resources and the environment in general.

There needs to be an appeal process from whatever regulatory measures are put in place. The appeal process should consist first of a hearing by a citizen board. If that does not result in satisfactory resolution of the dispute, then either party can request alternative dispute resolution—the use of environmental mediation. If the mediation is unsuccessful, the use of the courts is appropriate. Legal proceedings should be disallowed until the first two steps have been completed.

STATEMENT OF CALIFORNIA ASSOCIATION OF SANITATION AGENCIES

Mr. Chairman and Members of the Subcommittee, I am Robert Miele, Director of Technical Services at the County Sanitation Districts of Los Angeles County, which provides wastewater treatment services to more than 4.8 million people in 79 cities and the county of Los Angeles. I am here today representing the California Association of Sanitation Agencies (CASA).

CASA is a statewide association of 90 wastewater treatment agencies that collectively serve more than 15 million people throughout the State of California, over half the sewered population in the State.

Since 1972, when Congress passed the Clean Water Act, and most recently the Federal Water Pollution Control Act of 1987, CASA agencies have endeavored to work with EPA and the State of California to implement the requirements of this law. Thus, we are pleased to have the opportunity to present our experience to this Subcommittee and recommend revisions to our nation's present clean water program that we believe will promote sound water quality protection policies into the next century.

CASA believes a number of clean water policy issues are ripe for the Subcommittee's review and revision, many of which are addressed in S. 1114. The focus of this testimony will be on CASA's perspective on the need for a comprehensive Watershed Management approach to water quality protection, and our comments on Section 302 of S. 1114.

The California Perspective

For years, California has been among the leaders in clean water policy development and implementation. CASA is proud of the role that its member agencies have played in providing clean water throughout the state. Recently, however, we have observed the implementation of a clean water policy that is misdirected and unrelated to the available resources. Therefore, for the past several years CASA has been promoting the adoption of a new paradigm for water quality protection: a Watershed Management approach. I am attaching to my testimony (Attachment A) a report entitled "Watershed Management Approach to Toxicity Control," which was prepared in 1992 by Tri-TAC, a statewide technical advisory organization composed of representatives of CASA, the League of California Cities, and the California Water Pollution Control Association. TriTAC's report provides a vivid case study of the Sacramento River, indicating that the major point source discharger to the Sacramento River, the city's POTW, contributes a very small percentage of the metals to the river and yet, under current law may be forced to spend an enormous amount of money to remove these metals with little attendant water quality improvement. The report illustrates the need for a Watershed Management approach and provides an overview of Tri-TAC's ideas regarding how Watershed Management could be implemented. CASA believes that the Watershed Management approach embodied in S. 1114, while somewhat different from that outlined in this report, represents a strong step toward a nationwide commitment to Watershed Management. We are encouraged to see that the debate centers on how, not whether, to design a reasonable Watershed Management policy.

In addition, over the past year, CASA has developed a state-level legislative proposal to implement Watershed Management within California (Attachment B). This proposal is premised on a strong directive from the federal government to the states to approach Watershed Management programs with the same commitment that has been brought to existing Clean Water Act programs. This is vital. Unfortunately, CASA has witnessed inertia on the part of some state and regional regulatory officials who prefer existing programs with which they are familiar (and therefore comfortable) over innovative and cost-efficient water quality programs that would address all sources of water pollution. Therefore, a strong and clear commitment to address water quality through Watershed Management must emerge from renewal of the Clean Water Act. Without this, we are concerned that present regulatory practices will hamstring any meaningful effort to implement Watershed Management programs.

A New Paradigm for Water Quality Protection: The Watershed Management Approach

Enhancement of water quality and water resources to meet national goals through the end of the decade requires a policy and programs that differ from those of past decades. CASA believes a national approach that directs states to implement innovative solutions to site-specific water quality problems is needed, and that such an approach must provide the umbrella for all existing point and nonpoint source water quality programs into the next century. To this end, CASA suggests that S. 1114 be modified to explicitly incorporate other point and nonpoint source programs into the Watershed Management framework. CASA believes Watershed Management is the preferred alternative for several reasons:

- It will permit water pollution threats to be considered on a regional basis instead of on the basis of political jurisdictions.

- It offers the opportunity for all affected parties to work in a cooperative manner to identify water quality priorities and develop appropriate, cost effective strategies for meeting water quality goals within a watershed.
- It offers the chance to target resources toward the real environmental threats. Rather than mandating that all point source dischargers simply meet numeric standards regardless of the impact (or lack thereof) of point source dischargers on a water body, CASA believes that the Clean Water Act should require states to adopt innovative water quality-based permit requirements on a watershed basis that recognize the multi-source nature of pollution (point, nonpoint and atmospheric) and the cross-media impacts that may result from controls. Section 302 of S. 1114 provides an excellent start toward accomplishing that objective. CASA has the following specific comments on Section 302:

1) The Importance of Incentives

While CASA believes that it is imperative for a Watershed Management approach to be adopted on a national basis, we understand the need for different regions and states to have flexibility in how they approach water quality protection. Therefore, we endorse the use of incentives such as those included in S. 1114 to encourage the widespread adoption of a Watershed Management approach.

The choice of an administrative mechanism to develop, implement and evaluate Watershed Management Plans is one of the keys to ensuring timely implementation while minimizing the lag time inherent in any new policy endeavor. CASA supports the use of existing state organizations as the Watershed Management entity. California has regional water quality boards and a Statewide water resources control board. During these times of limited public resources, CASA believes that existing management systems should be used whenever possible to stretch the public's tax dollar. At the same time, we recognize that some states may not have a similar management structure that will lend itself to planning and implementing a Watershed Management program. Therefore, we believe that it is important to provide a state with the latitude, as S. 1114 does, to design its own administrative mechanisms and procedures and to designate the entity that would implement the watershed program.

In addition, we believe it is appropriate to make additional funding available under the State Revolving Loan program to assist in the implementation of Watershed Management for those states that choose to develop Watershed Management Plans. In these times of fiscal distress at the state and local levels, we regard it as essential that states be able to use State Revolving Loan funds to carry out Watershed Planning activities.

The basis of any successful Watershed Management program will rest on how a state defines the watershed and the sources of pollutant loadings within it. In California, we are fortunate that our watersheds are almost completely confined within our borders. This makes the task of designating watersheds and outstanding national resource waters much easier. However, CASA recommends that you consider modifying S. 1114's designation provisions to require EPA and a state to act within a specified time on a resubmitted watershed designation. This will ensure timely progress in Watershed Planning.

2) The Need for Sound Science to Ensure the Protection of Water Quality and the Appropriate Allocation of Resources

The requirements for comprehensive monitoring and assessment contained in S. 1114 are imperative to ensure that an adequate database is available to develop effective Watershed Management Plans. The database provided by such a monitoring program should be designed to identify the real threats to water quality, which often have remained unaddressed under the existing "command and control" regulatory regime of water quality protection and maintenance.

In general, CASA believes that water quality standards should be based on empirical, site-specific studies and monitoring to guarantee that water pollution mandates are relevant and provide a reasonable benefit for the costs incurred. During these times of limited public and private resources, we need to correct the current wasteful "command and control" approach that provides a false sense of environmental improvement at great cost to the public.

Ongoing efforts to address toxics in the San Francisco Bay area provide a good example of how the existing "command and control" approach fails the public's need to obtain necessary environmental improvements at the least overall cost. Since 1960, San Francisco Bay Area POTWs have spent more than \$3 billion to upgrade wastewater treatment systems. These improvements have resulted in 95% removal of conventional pollutants. Pretreatment programs and local limits have fur-

ther reduced toxic discharges. Today, POTWs and industrial dischargers contribute less than 15% of the total metals discharged to the Bay. In fact, our State Water Resources Control Board estimates that POTWs and other point sources contribute less than 3% of the entire pollutant loadings to the Bay. Despite these small loadings, the City of Palo Alto will need to spend more than \$100 million to build lime treatment and reverse osmosis facilities to remove metals in its 23 million gallon per day (MGD) wastewater treatment plant to meet State water quality standards. Annual operating costs for these facilities are estimated at \$21 million. This tremendous capital investment would result in an annual reduction of just 202 pounds of copper in the plant's wastewater discharge. Looked at another way, this represents a 0.02% reduction in the 1.2 million pounds of copper that enter the Bay each year. This situation is not unique to the Bay Area.

Other communities face similar expenditures to meet state water quality plan requirements. For instance, in areas of California and the arid West, such as the Los Angeles area where my agency is located, POTWs will be required to incorporate very costly technologies to treat wastewater discharged into water bodies composed wholly or substantially of wastewater effluent. Applying nationwide or statewide water quality standards to these effluent-dependent streams will result in tremendous public expenditure without a commensurate environmental benefit to the community.

For example, it will cost a single POTW discharging into the Santa Ana River in Southern California \$110 million to remove ammonia from its effluent. This additional treatment will result in a 73% increase in the local community's wastewater rates. Curiously, this removal effort is intended to protect the estimated 2,600 adult mosquito fish that are planted for mosquito larvae abatement in the 8 to 10 mile river segment below the dischargers. Keeping in mind that there are no native fish in the river because of the physical limitations of the habitat, the question must be asked: what does this treatment cost mean to the average ratepayer? Simply put, the cost to remove ammonia is estimated at \$37,000 per fish, or about \$19 million per pound of fish. Moreover, there is no requirement for proof that the mosquito fish are even threatened by the current discharge levels before these new requirements are to be imposed. Dischargers are simply required to meet numeric criteria calculate on a national basis irrespective of local species and water quality.

These examples illustrate the substantial costs local communities will incur to meet permit limits derived from EPA's water quality criteria, regardless of the net effect on receiving water quality. A Watershed Management approach, if applied to these situations, could ensure that water quality standards (and effluent limits) are relevant to the watershed.

3) Addressing All Sources Through Watershed Planning

While differences may arise on how best to design a Watershed Management program, most interested parties would agree that it makes no sense to require compliance with numeric standards (or effluent limits in permits) until all pollution sources are addressed in a coherent plan. Under such an approach, a point source would be issued a permit with effluent limitations that recognize the overall benefit of controlling pollutants from all sources. Thus, a POTW could be subject to a limitation that is less stringent than attaining and maintaining an existing water quality standard if a Watershed Management Plan that includes enforceable reductions in pollutant loadings from urban and rural nonpoint sources can ensure that water quality standards will be met. CASA applauds the Committee for including in S. 1114 provisions to allow this approach to be implemented.

It is now widely accepted that the majority of impaired waterbodies are being degraded primarily nonpoint sources. Hence, we suggest that the Subcommittee strengthen S. 1114 by linking by Sections 302, 303, and 304. Watershed Management will work only if *mandatory* controls are imposed nonpoint sources in those watersheds in which designated uses are not being met and nonpoint sources are demonstrated to be a significant source of pollutants.

4) The Need to Coordinate NPDES Permitting and Watershed Management Planning

One of the most important concerns for CASA member agencies has been the sense that we are moving down an immutable path toward the adoption of effluent limitations in NPDES permits that reflect newly adopted water quality standards, regardless of the attainability or environmental relevance of such standards. Hence, we are greatly encouraged to see in S. 1114 the inclusion of provisions that would allow NPDES permit terms to be extended while a watershed plan is being developed. This is the only way we see for permittees to avoid potentially unnecessary

expenditures of public resources, given that antibacksliding provisions under Section 402(o) of the Clean Water Act would prevent changes in permit limits even if a Watershed Planning effort determines that less stringent limits are acceptable. CASA would like to suggest, however, that S. 1114 be modified to ensure that NPDES permit terms will be extended until a Watershed Management Plan has been approved by EPA (or a delegated state). Of course, we would agree that safeguards, such as continuing compliance with existing standards in permits, are necessary so that this would not become a blank check for point sources.

In conclusion, I would like to commend the Subcommittee for its foresight in including a Watershed Management program in S. 1114. CASA looks forward to working with the Subcommittee in the coming weeks as you refine the provisions of S. 1114.

Mr. Chairman, this concludes my testimony. I would be pleased to answer any questions you or your colleagues may have on how to ensure timely adoption and implementation of Watershed Management Plans at the state and local level. Again, CASA appreciates the opportunity you have extended us to participate in this important endeavor.

WRITTEN STATEMENT OF THE CHEMICAL MANUFACTURERS ASSOCIATION

The Chemical Manufacturers Association (CMA) appreciates the opportunity to submit this written statement on S. 1114's proposed amendments to the enforcement provisions of the Clean Water Act. CMA is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity of basic industrial chemicals in the United States. CMA's members discharge wastewaters to U.S. waters in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements and to publicly-owned treatment works in accordance with the pretreatment requirements of the Clean Water Act. Therefore, these companies will be directly and significantly affected by modifications to the Act's enforcement provisions.

CMA supports vigorous enforcement of the Clean Water Act's requirements. However, we believe that ample enforcement authority already exists under the present Act. As evidence, EPA reports that enforcement activity overall is on the rise. In fact, there were more civil and criminal penalties assessed during fiscal year 1992 under the Clean Water Act than under any other environmental statute. Citizen suit enforcement also continues to increase. The U.S. Public Interest Research Group (PIRG) recently reported that "existing citizen suit provisions have allowed significant enforcement activity." In light of these findings, we see no need for expanded enforcement authority—either for EPA or for citizen groups.

The bill before this subcommittee, S. 1114, however, would significantly expand this authority. We would like to point out some of our serious concerns with these provisions. Before turning to these specific provisions, however, we would like to address what appears to be motivating these proposed modifications, namely the *perceptions* that significant noncompliance is widespread and that enforcement by EPA and the states is woefully inadequate. *In fact, neither of these perceptions is true.*

First, reports of widespread non-compliance are contradicted by EPA's own assessment, as reported by Senator Graham at the July 14 hearing on nonpoint sources. According to this assessment, 87 percent of industrial and 85 percent of municipal sources are in substantial compliance with CWA permit requirements. Further, in evaluating the extent of non-compliance, it is important to understand how EPA develops technology-based permit limits. EPA calculates daily maximum pollutant limits that it believes can be met 99 percent of the time, and monthly average limits that the Agency believes can be met 95 percent of the time. Thus, violations can be expected to occur 1 percent and 5 percent of the time by the very nature of the method EPA uses to derive the limits. Facilities like chemical plants that have permit limits for many pollutants, therefore, can be expected to have exceedances, even though they may be in compliance with their permit limits more often than predicted by EPA's methodology.

For example, an enforcement action involving over 100 violations during a 5-year period may sound like a lot, but in fact it would mean the company was in compliance with its permit 99.7 percent of the time. This is better than expected by EPA's methodology. Thus, when reports claim that significant numbers of the nation's major facilities reported *some* violation of the Act, what is truly notable is not the percentage of facilities that reported violations, but rather the fact that a greater percentage of the facilities reported no violations at all.

Second, it is important to understand the nature of the analytical tools that facilities must use to measure compliance. Even state-of-the-art, EPA-approved analytical techniques have a wide range of uncertainty associated with them. As a result, many reported violations may not in fact be "true" violations if they are within the range of uncertainty of the analytical method.

These factors underscore the need for prosecutorial discretion by government enforcement authorities, discretion that is not reflected in simple "bean-counting" enforcement reports.

The exercise of enforcement discretion is, of course, not unique to the area of environmental enforcement. For example, even though there are constant reminders of speed limits along the roadways and even though we are all aware that "speed kills," we would all be horrified, and somewhat poorer, if police officers issued tickets automatically to every driver who exceeded 55 miles per hour on the Washington Beltway. After all, even the most careful driver who diligently seeks to comply with posted speed limits, occasionally finds that the speedometer has crept up to 58 or 60 miles per hour before quickly releasing the accelerator and returning to 55. We would all probably agree that the police should not fine such a driver. On the other hand, drivers who routinely drive well in excess of the speed limit should be cited and fined. The same is true for violations of environmental regulations, including the Clean Water Act.

Put simply, not all violations are significant enough to warrant enforcement. The existing Clean Water Act provides sufficient tools for agencies to enforce against facilities when it is warranted, while providing for appropriate prosecutorial discretion in cases where it is not.

We conclude, therefore, Mr. Chairman, that there is no need for the additional enforcement mechanisms proposed in S. 1114, such as field citations or contract bars.

There is also no need for Congress to overturn the Supreme Court and allow citizen suits for wholly past violations. The objective of citizen suits should be to bring facilities into compliance. Authority to seek punitive penalties for wholly past violations properly belongs to governmental officials, who are accountable to the public.

S. 1114's provision authorizing natural resource restoration is also unnecessary. Natural resource restoration can be obtained under other statutory authorities. It is still very much in the developmental stages, however, so its successful implementation is at best speculative. Including this authority in the CWA will only invite costly litigation, for questionable environmental benefit.

There is also no valid reason for changing how the Act treats violations that result from a single operational upset. In particular, violations of pollutant limits that result from a single operational upset should continue to be considered a single violation.

Finally, there is no need to change the existing provision barring subsequent enforcement by citizen groups when a state has brought an administrative enforcement proceeding.

In summary, the proposed enforcement measures in S. 1114 are unnecessary. They are based on false perceptions about the extent of non-compliance and the level of government enforcement activity. Continued improvements in compliance can and will be accomplished through vigorous application of existing enforcement authority by EPA, states, and citizen groups.

WRITTEN STATEMENT OF THE NATIONAL ENVIRONMENTAL DEVELOPMENT ASSOCIATION

INTRODUCTION AND SUMMARY

The National Environmental Development Association's Clean Water Project is pleased to offer its views to the Subcommittee on Clean Water, Fisheries and Wildlife on enforcement issues in the reauthorization of the Clean Water Act. The National Environmental Development Association is a diverse coalition of companies united in the belief that it is possible to have both economic growth and a clean environment.

The NEDA Clean Water Project believes that vigorous law enforcement is essential to the success of the Clean Water Act. Where individuals or companies violate the law they should be prosecuted and punished in proportion to the degree of their offense. Even so, citizens should not be given the right to sue companies for violations that occurred entirely in the past. Such actions are punitive—they do not improve present compliance or deter future violations—and should remain the prerogative of governments. The government should preserve its authority over such ac-

tions to ensure that all societal goals are considered in deciding to pursue any punitive action.

Some have called for Clean Water Act enforcement to be strengthened, and have looked to the New Jersey Clean Water Enforcement Act as a model for such enhanced enforcement. New Jersey's experience, however, is a model of what not to do. The law has created bureaucratic gridlock, discouraged voluntary action, created inequities in enforcement, and eliminated flexibility in the Act—all without improving New Jersey's water quality. The Governor's Economic Summit Committee on Government Regulations reported to Governor Florio, "While the program (Clean Water Enforcement Act) is recognized to be potentially disastrous to many areas of the economy, its impact on improving the environment was known to be negligible by virtually all professionals who reviewed the bill." The law has been counterproductive, and has created barriers to improving the state's water quality. Congress should not repeat New Jersey's mistake.

CITIZEN SUITS

Citizens should not be given the right to sue for violations that occurred in the past. Such authority would eliminate the distinction between citizen and government action to punish past transgressions. Eliminating that distinction carries a danger in that individual citizens are not bound by the government's need to pursue many public policy objectives. Citizens may ignore their effect on other societal objectives in the single-minded pursuit of one goal, and without the government's constraint of public accountability.

Such actions are entirely punitive—they do not improve present compliance or deter future violations—and are the prerogative of governments. The government should preserve its authority over such actions to ensure that all societal goals are considered in deciding to pursue any punitive action.

Moreover, natural resource damages should not be made a part of CWA enforcement. Environmental remediation is already a part of other laws. CWA enforcement should contain penalties appropriate to the degree of any violation and should be sufficient to be a deterrent to future violations. The separation between improvement projects and fines should continue to be maintained.

ENFORCEMENT—THE NEW JERSEY EXPERIENCE

Recent attention has focused on the New Jersey Clean Water Enforcement Act (CWEA) as a model for the country, and suggestions have been made that elements of the CWEA should be incorporated into the Clean Water Act during its reauthorization. New Jersey's experience, however, shows that the CWEA is bad public policy. It is expensive. It is inefficient. It is inequitable. It discourages voluntary environmental protection, and it does not improve water quality. It is a model of what not to do, and should not be followed at the federal level.

New Jersey Water Pollution Control Program Is Unmanageable

The design and operation of New Jersey's water pollution control program, the New Jersey Pollution Discharge Elimination System program (NJPDDES), is disastrous. It has the highest fees in the nation, and the longest backlog for issuing permits. The CWEA has substantially and materially added to the bureaucratic quagmire in the program's management. While the program has many critics, in the private sector and in local government, the strongest voices come from within the New Jersey Department of Environmental protection and Energy (NJDEPE). The water program was recently described by the chief policy planner for the NJDEPE as almost unmanageable.¹ NJDEPE Commissioner Scott Weiner said on January 8, 1993: "We are all too aware that the NJPDDES program has been plagued with administrative and technical problems. As a result, few new permits have been issued and many facilities are operating under expired permits with outdated requirements. Without public support and confidence in a regulatory program the state cannot meet its obligations to protect the environment and natural resources."²

CWEA Is Part Of The Problem Not Part Of The Solution

Since the CWEA was first proposed in 1988, New Jersey has lost over 100,000 manufacturing jobs, and some of the remaining facilities have had to pay millions of dollars in penalties. This inflexible regulatory system has not produced a measurable improvement in the quality of New Jersey's waters. This result confirms the original analysis by the staff of the NJDEPE that the program would have a severe economic cost and little environmental benefit. Administrative and legal backlogs have paralyzed the system at every stage. The bureaucratic nightmare projected during the legislative debate has arrived.

In analyzing the law, however, one must ask what the CWEA has really accomplished.

First, as the examples described below will demonstrate, the law cannot discourage non-compliance if the causes of non-compliance are beyond the control of a permittee.

Second, the CWEA has taught industry that it is absolutely necessary to exercise all legal challenges to permits issued and to object to any permit condition which may not be fully attainable. Although this is less than an optimal approach, such legal challenges are a clear result of the CWEA.

Third, companies clearly recognize that they must meet their permit limitations and extraordinary efforts (often without clear environmental benefit) are being made to remain in compliance with permit terms.

Finally, an impact of the CWEA which is very difficult, if not impossible, to measure is the number of companies which are factoring the requirements of the CWEA into their decisions for locating new facilities in the State of New Jersey. To the extent such considerations are carefully evaluated, there likely have been disruptions to business growth in New Jersey.

A Level Playing Yield

Some believe that a National Clean Water Enforcement Act would level the playing field for New Jersey companies and municipalities. Imposing these conditions on the entire nation, however, won't help remaining New Jersey businesses; it would only hurt the rest of the nation. New Jersey with local officials, employers, union workers and the State officials who administer this program overwhelmingly condemn it. CWEA creates regulatory gridlock that has placed every NJPDES permit holder in a depressing pit. To place the rest of the nation in the same pit may level the playing field, but at what cost in terms of jobs, competitiveness, output, and living standards; and for what benefit to the environment?

A Model For What Not To Do

Regulatory policy should be perceived as effective, efficient and consistent by the public and the regulated community. For an environmental policy to be judged effective it must be demonstrated that environmental goals are achieved in the most cost effective manner. The CWEA has failed these test in New Jersey.

Case studies will demonstrate the problems that have been generated by this program. Company names are not used because problems are not unique, but are representative of problems with provisions of the New Jersey law. CWEA is a public policy that has punished many companies and municipal entities that were making a good-faith effort to meet their water permit requirements by imposing an automatic enforcement system complete with unjust mandatory fines, and the threat of criminal prosecution and jail sentences.

Serious Violator: Is This A Meaningful Measurement

CWEA, along with federal enforcement, uses the simplistic proposal for defining a significant violator as a person who exceeded an individual permit parameter limit by 20%. This is an unscientific measurement that is unrelated to public health or environmental harm. It contradicts the fundamental nature of water pollution control systems, and fails to recognize the sampling inaccuracies of the existing permit system. The scientific literature demonstrates that a 20% exceedance of a single sample for parts per billion measurements can be within the variability of the testing methodology.³ Many agencies and businesses take these costly samples once per reporting period. Increasing the required number of reporting periods increases the chance for statistical variance.

Mandatory Penalties Imply A Level Of Engineering Perfection

A National Clean Water Enforcement Act would result in a regulatory overhaul that would take professional discretion out of the hands of the EPA and state environmental officials and replace it with an inflexible regulatory system. Such a proposal ignores the realities of a permitting system, has little or no relation to actual environmental harm or cause for such harm, and could actually cause environmental harm as it forces companies to try to renegotiate permits to higher levels. In New Jersey, the State does not have the discretion to distinguish between the true violations and the "false positives" inherent in any scientific monitoring system, and companies have been forced to take a harder line in negotiating for permit limits to build in a comfortable "margin of error."

CWEA Program Assessment

Industry, local government officials, and state enforcement personnel provide universal criticism of CWEA at environmental forums and in written reports. In 1991, a special working group on Governmental Regulations told Governor Florio.

"While the program (Clean Water Enforcement Act) is recognized to be potentially disastrous to many areas of the economy, its impact on improving the environment was known to be negligible by virtually all professionals who reviewed the bill. Despite overwhelming data in opposition to the legislation, substantive comments were ignored by the Administration and the bill was passed purely for political reasons. This was a special piece of law designed for the political benefit of one group at the expense of most of the taxpayers."⁴

A blue ribbon committee that examined the operational problems of the NJPDES program stated in their report to the NJDEPE Commissioner that the mandatory actions and penalties in the Act should be reviewed and modified to improve both their cost and resource effectiveness and to remove barriers for the enhancement of water quality.⁵

The task force went on to state, "In the three years that have passed since the Act's implementation, it has become evident that numerous items in the Act are counterproductive and create barriers to improving the State's water quality."

In particular, provisions of the Act:

- Delay actions that can achieve improvements in water quality;
- Divert both industrial and Departmental resources toward administrative and legal issues and away from activities designed to solve problems to enhance water quality;
- Require duplicative reporting;
- Remove needed Departmental discretion which forces adjudication because of fear of mandatory penalties even with non-achievable permit limits or no environmental impact or benefit. Permittees are forced to litigate permit conditions and limits up front, with accompanying high consultant and adjudicatory costs. Public and private moneys are required for these adjudicatory costs instead of being expended on upgrading facilities to improve water quality;
- Mandate the Department to pursue penalties for violations of permit limits that it considers incorrect but has not yet corrected;
- Preclude the use of a common sense approach to solve problems; and
- Affect all sewer use rate-payers through higher fees due to statutory-required actions.⁶

Inflexible Enforcement

The CWEA adopts a "penalty matrix" enforcement strategy which effectively insulates people in the enforcing agency from site-specific mitigating factors in the enforcement process. At most, a penalty matrix should be used as a guideline. These high levels of fines, however, coupled with an inflexible enforcement process, is one of the main arguments used by those who consider New Jersey a bad place for business.⁷

CITIZEN SUITS: DO WE NEED TO LOOSEN THE REQUIREMENTS (CASE STUDY)

Company A owns and operates a facility in Flemington, New Jersey, which produces zirconium compounds. Company A holds a National Pollution Discharge Elimination System ("NPDES/NJPDES") permit for discharge into surface water.

Company A is presently defending two concurrent lawsuits resulting from its alleged violations of its NPDES/NJPDES permit. The first is an enforcement action by the New Jersey Department of Environmental protection, and the other is a citizen's suit brought by two non-profit corporations, public Interest Research Group of New Jersey Inc. and Friends of the Earth Inc. PIRG and FOE seek to recover substantial civil penalties and costs of litigation, including attorney's fees. The total amount of penalties sought by PIRG and FOE is in excess of \$5 million.

Company A produced evidence to prove that PIRG and FOE could not and did not suffer any injury as a result of its "technical" violations, which were related to unforeseen, uncontrollable, natural, environmental conditions or phenomena, or were measurement anomalies. However, the United States District Court for the District of New Jersey granted plaintiff's summary judgment motion concluding that harm was basically irrelevant in establishing liability, and held Company A liable for civil penalties in an amount to be determined at trial. Company A filed an interlocutory appeal in the Third Circuit affirmed the lower court's opinion despite the fact that

it realized the injury requirements has become a "complete fiction." In oral argument on December 8, 1992, the court stated as follows:

"We did a little bit of research and . . . from published reports, the salt content of the water that was being discharged by this plant is lower than the Sodium contents of some very pricey bottled mineral waters . . .

If that were true, wouldn't that be a fiction that pouring something that is the equivalent of polinaris (sic) drinking water into a Creek in Hunterdon County gives (plaintiff) standing to object to it because he drinks the Trenton drinking water that comes from the Delaware River?"

The consequences of the court's decision to businesses in New Jersey is significant. First, the fact that these types of "technical" violation are subjecting industry, including small companies such as Company A, to the potential of such enormous penalties for discharge violations which have no adverse impact on the environment, is of obvious concern to permit holders across the state. The court's decision makes it possible for groups to subject companies to significant penalties simply because a permit parameter was violated even when no harm resulted. Companies will have to predict permit parameters with absolute certainty in order to avoid liability. This will make the permitting process more difficult and expensive as perfection must be achieved to avoid suits. Furthermore, this policy will discourage the location of any new industries who discharge at all since unpredictable excursions could subject them to massive liability.

Ducks On The Pond

Company A's permit imposes specific discharge limitations upon Company A for various parameters including total organic carbon (TDC), total dissolved solids (TDS), total suspended solids (TSS), sodium, temperature and oil.

Company A's manufacturing process produces no TDC. Instead TDC excursions were caused by geese inhabiting Company A's storage ponds and dropping fecal matter into the water which, in turn, acted as nutrients for algae which resulted in higher levels of TDC. The temperature excursions were a direct result of the sun warming the effluent to the same ambient temperature as the creek which happened to be warmer than predicted in the permit.

Citizens should be concerned about the design and implementation of a public policy that is willing to render environmentally conscious companies liable in the context of these citizen suits for permit violations which do not cause any injury or environmental harm.

It seems evident that if an ultimate appeal to the U.S. Supreme Court fails, Company A will be forced into an out-of-court settlement with the plaintiffs. Legal fees will be paid to the plaintiffs attorney and Company A will fund an environmental project selected, recommended or approved by the plaintiffs. A multi-million dollar settlement would be viewed as a victory for the "environment." The reality is that 100 workers would probably lose their jobs when such a settlement in all likelihood forces this business to close.

Parking Lot—\$60,000 (Case Study)

A mid-sized New Jersey manufacturer, Company B, has been fined close to \$60,000 with the potential more to come, for permit exceedances resulting from stormwater runoff from its parking lots. The permit in question was issued in the early 1980s. The permit was obtained at the time to regulate the discharge from a sewage treatment process on the site which is now long gone. Per DEPE's instructions, all stormwater runoff points were also included in this permit. The parameters for stormwater discharge were established in the absence of sufficient data since EPA was conducting a nationwide stormwater study and nothing was concluded at the time.

When regular monitoring of the stormwater was undertaken, it became clear that the quality of stormwater runoff was affected by salt, sand, dirt, vegetation, pollen, acid rain, and other environmental factors, many beyond the control of the facility. Since the limitations were set in the absence of data, the company has had major difficulties in meeting the permit limits in terms of particulates and pH.

Extensive discussions with DEPE aimed at revising their permit yielded no result. DEPE officials cited the "anti-backsliding" provisions of the federal Clean Water Act, which aims to prevent real polluters from cutting unfair deals.

This facility's otherwise sterling record in environmental control has counted for nothing with DEPE. They are paying the sort of enormous fines that only malicious polluters should pay. In addition, they are incurring sizable legal costs to deal with the administrative process associated with their case.

NJPDES Parking Lot—\$1 Million (Case Study)

Company C, a paint pigment manufacturer, applied for a non-contact cooling water discharge permit application in 1977. The original plans (to discharge non-contact cooling water) that necessitated the application for a NJPDES permit were never implemented. Nonetheless, the facility received a NJPDES permit which they never carefully scrutinized. As a result, the only discharge which became regulated was for stormwater from the facility parking lot. Now, with the adoption of the CWEA, the rules with regard to NJPDES permits and penalty imposition for non-compliance with NJPDES permits have changed.

Company C can document that off-site sources contribute significantly to the contaminants monitored. In fact, stormwater has been monitored before it reaches the facility and high levels of the pollutants regulated by the company's NJPDES permit have been observed. Unregulated neighboring facilities and the contaminants in stormwater flowing onto the facility from city streets are contributing to the effluent monitored pursuant to the company's NJPDES permit. A single facility should not be held responsible for runoff from unregulated neighboring facilities. Nonetheless, this is precisely what is required by the company's existing permit effluent limitations. Clearly, no single company can foresee or control what occurs off-site. As a result of the off-site impact and the severe penalty actions initiated by the NJDEPE, the company has gone to great lengths to reduce the possibility that stormwater is impacted by its facility. To the extent it has control over stormwater discharge, the company has, over the years, undertaken substantial efforts to comply. To do so, the company has had in place a Best Management practices (BMPs) program. In light of the severe penalties imposed pursuant to the CWEA, however, the company was forced to develop an Extraordinary Management Practices plan making even more substantial improvements to reduce the presence of contaminants in stormwater runoff.

The efforts to reduce contaminants levels in stormwater runoff has involved the expenditure of more than \$1 million. Perhaps the most important actions taken by the company to maintain permit compliance were the purchase of an employee parking lot across the street and the absolute prohibition of employee parking on the NJPDES regulated parking lot. Additionally, the company has purchased machinery to mechanically sweep their regulated parking lot. Until prospective relief with regard to its NJPDES permit is obtained, the company faces continued penalty exposure for circumstances clearly beyond its control. In sum, application of the CWEA to this particular facility provides no environmental benefit and demonstrates that the New Jersey regulatory scheme yields perverse results.

Environmental Volunteer—\$154,500 (Case Study)

Company D's case involves a company (a commercial truck stop) that was penalized severely because of voluntary efforts to act in an environmentally responsible manner. The NJPDES permit for this particular company was issued as a result of its entirely voluntary decision to install an oil-water separator. In an attempt to operate as a good corporate citizen, and in the interest of maintaining a clean, contamination-free facility, the oil/water separator was installed. There are no rules and regulations in effect now or at the time that the oil/water separator was installed that would have required the company to purchase and operate this device. Moreover, the company was not compelled in any way to place or operate the oil/water separator. Nevertheless, the company opted for this approach. This wholly voluntary effort to act in environmentally responsible manner required the company to obtain an NJPDES permit. As a result of this permit and exceedances of certain parameters set forth in it, an enforcement action and severe penalties (\$278,500) were assessed (penalties were settled for \$154,500).

If this company had not voluntarily chosen to install the oil/water separator, an NJPDES permit would not have been issued and penalties would not have been assessed. By putting the oil/water separator into place, this company stands out among the truck stops located in its general vicinity. Indeed, this particular truck stop is one of the cleanest and most well maintained in the state. Nevertheless, severe penalties were levied because of its efforts to be environmentally responsible.

Since imposition of the penalty assessment, this particular company has gone a step further and installed a new oil/water separator which is larger and more efficient than the separator previously used. Thus, not only did this company act initially as a good corporate citizen, but it has continued to act in that fashion despite the punitive nature of the penalties which were imposed by the NJDEPE.

These cases are poignant examples of the negative impact of the CWEA. This list of case studies could continue where the CWEA clearly provides no improvement in water quality and does nothing more than exhaust the resources of New Jersey

businesses. Most such cases involve NJPDES permits which were issued for stormwater from facilities. Such permits generally impose numerical effluent limitations which merely monitor non-hazardous pollutants at the end of a pipe, and do not prevent pollutants from entering the waters of the state. It is our understanding that the effluent limitations established in many NJPDES permits were based on a United States Environmental Protection Agency Region II policy memorandum dated in 1978 regarding surface water and cooling water discharges. To our knowledge, no scientific data supports the effluent limitations continued in that memorandum. Nevertheless, the guidance was used by New Jersey to establish many permit numerical effluent limitations. Additionally, existing permits with numerical effluent limitations fail to consider the relationship between the cost of attaining a reduction in contaminant levels and the environmental benefit of the effluent reduction.

Effluent measured by many NJPDES permittees is comprised largely of and is greatly impacted by contaminants emanating from off-site sources. It is clearly unfair to hold permittees responsible for runoff from unregulated, adjacent facilities which happen to drain through their facilities.

Five Days Late—No Pollution But A \$12,000 Fine (Case Study)

Representatives of Company E, a manufacturing facility in West Trenton, were appalled to learn that they faced a potential fine of \$12,000 for the late submittal of a routine form related to a quarterly sampling report for stormwater on their property. According to the company, they submitted the report five days late and it did not contain any permit exceedance. The reporting form was misplaced by a clerical employee of the company. The firm has been submitting this form on time and without permit exceedance since 1985. A departmental employee informed the company that the penalty for late submittal could be reduced by up to 50 percent. That would be a \$6,000 fine for less than a week delay in filing a report that today wouldn't even have to be filed if the company was covered by the new general permit for stormwater.

The company representatives were, not surprisingly, upset about the draconian nature of this penalty. When they sought the assistance of the NJDEPE in reducing this penalty to a level that would be compatible with the degree and nature of the offense, they were told that the state did not have any discretion in this matter and that the actual penalty would be \$12,000. This case is symptomatic of an enforcement policy that appears unfair and out of line with a public policy that would have the penalty commensurate with the crime.

Conclusion

CWEA has not helped maintain and restore the chemical, physical, biological integrity of New Jersey waters. It has instead hindered the State's efforts to improve its water quality while creating an unfair and unworkable administrative structure. Congress should not use New Jersey's law as a model for the enforcement of the Clean Water Act.

Footnotes:

- ¹ Rick Sinding, Assistant Commissioner NJDEPE, speech before the South Jersey Summer Institute, Woodbury Heights, New Jersey, (July 12, 1993).
- ² *NJDEPE NEWS*, 93/05, January 8, 1993.
- ³ See *Environmental Technology and Science*, Vol. 22 No. 1988 p. 1122.
- ⁴ *Report of Governor's Economic Summit Committee on Government Regulations* May 2, 1991.
- ⁵ "Recommendation #9" *NJPDES Fee Taskforce*.
- ⁶ *Ibid.*
- ⁷ *Report of Governor's Economic Summit Committee on Government Regulations* May 2, 1991.

STATEMENT BY TUDOR T. DAVIS, ACTING DEPUTY ASSISTANT ADMINISTRATOR, OFFICE OF WATER, ENVIRONMENTAL PROTECTION AGENCY

INTRODUCTION

We address today a subject of great importance—the critical need to protect our watersheds in a comprehensive, integrated manner that expands our focus beyond source-specific chemical pollution to one that addresses aquatic ecosystems in their entirety. The United States Environmental Protection Agency (EPA) believes that a watershed approach represents one of the best vehicles by which we can restore and maintain the physical and biological, as well as chemical, integrity of our Nation's waters.

Since 1972, we have achieved considerable success in substantially reducing the discharge of pollutants into our lakes, rivers, estuaries, wetlands and coastal waters. These successes have been achieved primarily through the control of point sources of pollution. While point source discharges continue to present an environmental threat in some areas, we have come to recognize that the health of our Nation's waters is endangered by many other activities that are not associated with point sources. Evidence of these problems can be seen in the decline of the salmon populations in the Pacific Northwest and the oyster stock in the Chesapeake Bay, in ongoing contaminated fish problems in the Great Lakes, in the declining health of the Everglades and the coral reef systems in Southern Florida, and in numerous other small and large watersheds across the country. We discussed the causes and effects of polluted runoff and other forms of nonpoint pollution in our testimony on July 14, 1993. My statement today will elaborate on the themes expressed in that testimony, and will discuss in greater detail an approach that focuses on the watershed as a whole, that addresses comprehensively all of the actual and potential sources of impairment of a waterbody, and that integrates many diverse programs to achieve fully the goals of the Act.

I would also like to discuss four important ecosystem protection programs that illustrate application of watershed principles. Three great waterbody programs deal with ecosystems that are very large in scale and that cross the boundaries of many States: the Great Lakes Program, the Chesapeake Bay Program and the Gulf Mexico Program. One additional program, the National Estuary Program (NEP), is a similar ecosystem protection approach that works on a smaller scale to protect water resources. Like the great waterbody programs, the NEP provides examples of State and local representatives cooperating to identify water quality problems in their shared water resources and to implement solutions. Each of these four programs also places considerable emphasis on protecting habitat and guarding the water resource against impacts to its chemical, biological and physical integrity. Today, I would like to explain how these four ecosystem protection programs fit into the watershed approach that the Agency advocates. And, finally, this statement will offer EPA's comments on a number of bills currently proposed to address problems within these important ecosystems.

OVERVIEW

The potential causes of impairment of a waterbody are as varied as human activity itself. For example, the health of an aquatic ecosystem may be threatened by discharges from industrial or municipal sources, from urban, agricultural or other forms of polluted runoff, from land disturbance activities and hydromodification, discharge of contaminated ground water to surface water, from overharvesting of fish and other organisms, from the introduction of exotic species, and even from deposition of pollutants originally emitted into the atmosphere. Many of these activities are addressed by programs under the Clean Water Act (CWA) or a variety of other federal laws that provide mechanisms to protect, restore and enhance our water resources.

Unfortunately, efforts under these programs have been largely fragmented and piecemeal. Under the constraints of their statutory authority, each of these programs focuses on particular sources, pollutants, activities or water resource uses and generally do not take a comprehensive, multimedia approach to water-related issues based on hydrologic boundaries. As a result, there are significant gaps in our efforts to protect ecosystems from the cumulative impacts of a multitude of activities that "stress" our waterbodies.

In an effort to address these complex remaining problems in a cost-effective manner, the Administration strongly endorses a "Watershed Management" approach which looks first to the ecosystem itself, evaluates its needs based on risk, a part of the process. We endorse this approach because we believe that tailored, coordinated solutions, to which local constituents are committed, can best be achieved within the boundaries of an identified natural resource or watershed. Our experience repeatedly shows that people are most likely to protect what they know and on which they depend for drinking water, recreation, sustenance or their livelihood. The watershed provides a logical area within which to build on this local commitment, to coordinate private sector, regulatory and voluntary programs, and to develop and implement solutions appropriate to the particular watershed. The watershed also defines an appropriate area in which to conduct monitoring and to provide a basis for employing appropriate economic incentives. In short, we can no longer assume that "national" solutions will, by themselves, solve all local problems, although our national baseline program will continue to provide the necessary foundation on which to protect our water resources on a geographic basis. Indeed, we recognize

that other levels of government and the private sector may have expertise, institutional arrangements or legal authorities more appropriate to addressing problems in these ecosystems than EPA or other federal entities. Finally, by focusing on the most significant problems specific to each watershed, rather than on trying to apply uniform remedies to all watershed, we believe that we can address our remaining resource problems more comprehensively and cost effectively.

We believe, therefore, that amending the Act with Watershed Management as a central organizing principle will help us to realize more fully the objectives of the CWA and to ensure that our valuable aquatic resources and the living resources that depend upon them are protected for our children and for future generations. We commend Senators Baucus and Chafee and their staff for incorporating into S. 1114 a comprehensive watershed program that rewards State watershed efforts and for making Watershed Management a central tenet in this reauthorization effort.

As will be explained in greater detail below, in EPA's view, a successful State Watershed Management program should incorporate certain minimum elements, which should be specified in the statute. First, with the help of U.S. Geological Survey hydrologic maps, the State should delineate the watershed of all water resources within the State. Second, the State should identify its impaired and threatened waters as well as other waters deserving special attention (such as estuaries, drinking water sources, or outstanding national resource waters) when preparing an inventory. Third, the State should ensure that the watershed boundary for each water in the inventory encompasses significant activities that threaten or impair the water resource. Fourth, the State should establish, in order of highest priority, a ranking of each delineated watershed for subsequent management. Finally, the State should convene Watershed Management teams for the highest priority watersheds, which would be charged with ensuring local participation, identifying the significant problems and overseeing implementation of the chosen solution. Ideally, EPA then should have the authority to approve and oversee State Watershed Management programs if the State wishes to take advantage of various incentives available upon approval of a State's Watershed Management program.

We also concur with the recommendations of Water Quality 2000, which among other things advocate incorporating the concept of "nesting" smaller Watershed Planning into the management of large water basins. These recommendations were endorsed by 64 public, private and non-profit organizations. Water Quality 2000 recommends that, where appropriate, Watershed Planning and management institutions should reflect the progression from small, highly localized watersheds to each successively larger watershed, culminating in the large water basin that encompasses them all. Institutions created to manage smaller watersheds should participate in planning and management of the large watersheds to which they belong. Such a nested hierarchy could be organized at the top with an umbrella planning institution for each major watershed. These institutions could include a mechanism to plan for protection of groundwater resources that cross watershed boundaries. In order to promote the planning and managing of large water resources on a regional basis, we believe that Congress should authorize the establishment of umbrella interstate regional mechanisms, including joint federal interstate compacts, at the request of States.

We have identified three opportunities to advance the watershed approach legislatively in the CWA. First, Title I of the Act should be amended to define and endorse the approach, including the concept of establishing interstate regional mechanisms to plan and manage water resources and to accommodate progressive hierarchies of watershed within a particular river, estuary or lake basin. Second, a new provision, not unlike the new CWA § 321 which would be added by section 302 of S. 1114, should be incorporated to reward States that develop State watershed programs. And third, where appropriate, existing provisions in the Act should be modified to facilitate the use of the watershed approach to the greatest extent possible. It should be noted that S. 1114 includes several changes that we believe will enhance our ability to look holistically at ecosystems. Before elaborating on the suggestions mentioned above, it is important that we first highlight EPA's experiences with the watershed approach to date and to touch upon some of the lessons we have learned.

THE ADMINISTRATION'S WATERSHED APPROACH

We believe that the watershed approach should be promoted through comprehensive State programs that would be approved by EPA in consultation with other federal agencies.¹ As a condition for watershed program approval, a State should be

¹ Hereafter the term "States" includes eligible Tribes and Territories.

required by the CWA to identify all watersheds within its borders and to rank those watersheds, from highest to lowest priority, according to the level of protection the State decides to accord to the water resource. This priority ranking or targeting process should involve key federal, State and local stakeholders and should reflect the State's inventory of its impaired, threatened or special waters. In order to facilitate more comprehensive inventories, we support the consolidation of the inventory provisions of Sections 303(d) 305(b) 314(a) and 319(n) into one comprehensive assessment and ranking process.

States should consider a variety of factors when ranking their watersheds. For example, a State should consider conferring priority status on those watersheds in which waterbodies fail to meet water quality standards or are otherwise impaired by loss of biodiversity or habitat, but also those watersheds containing waterbodies that are "threatened" or in need of special protection, such as outstanding natural resources waters or waters with unique or declining aquatic ecosystems. Watershed rankings should reflect the severity or immediacy of the risks to human health as well as uses of the watershed in terms of its economic, recreational and aesthetic importance.

Having defined and ranked its watersheds, a State seeking approval of its watershed program should then be required by statute to develop a management strategy for its watersheds. That strategy would need to include a schedule by which the State commits to address its watersheds as necessary to ensure the attainment of water quality standards and ecological objectives as required by the CWA. Schedules may be influenced by factors other than those considered in initially ranking watersheds. These may include, for example: the cost to achieve the goals; the amount of work necessary to achieve goals; the merits of pollutant reductions to be achieved, including the severity or immediacy of the risks to human health and living resources; the degree of public interest and willingness of stakeholders to proceed; the availability of resources (programmatic, technical and funding); and the likelihood of success.

Watersheds in which no threat, impairment or special need is identified may require little intervention to maintain the water quality of the river or lake it surrounds (although such water quality should be monitored periodically to verify ecosystem health). Other watersheds may need extensive management over time, which may involve many levels of government and other organizations. In order to receive EPA approval, a State Watershed Management program should specify minimum requirements, as set forth in the statute, for the management of these watersheds. For example, the statute should direct the State to establish for these watersheds management entities that would be responsible, at the watershed level, for the comprehensive assessment and management of the particular watershed. In order to ensure local involvement, these Watershed Management entities should be required to consist of stakeholders with an interest in the water resource and its protection-federal, State and local governments and most especially the sources whose activities are perceived to contribute to the problem and the general public who will benefit from the water's restoration. Using the resources and perspectives contributed by its participants, the Watershed Management entities should then be required to identify priority problems, their causes, and potential solutions. In addition, the statute should require each entity to develop expeditiously a management plan that specifies actions and implementation mechanisms to address those problems and that establishes watershed-level goals consistent with the CWA (including State water quality standards and biological, habitat and other physical factors such as flow) and the Safe Drinking Water Act. The statute should also specify that the management entity (or other organization, such as the State) possesses the authorities necessary to implement the plan and that the plan include a process to evaluate the success of the actions taken and revise the watershed plan as appropriate. We also encourage States to enter into agreements with other States, where watersheds cross State boundaries. The CWA could be amended to promote strongly interstate management efforts.

Although EPA should play an important role in facilitating the development of watershed-level management plans, we believe that approval and oversight of local watershed plans should be vested in States with approved statewide watershed programs in place. This will afford greater local flexibility and will prevent what could potentially be an overwhelming administrative burden for the federal government. Moreover, according to this central role to State programs avoids one of the primary problems experienced with the "Areawide Planning" approach in Section 208, which was not well integrated with State water quality programs. Legislation could ensure adequate federal involvement through EPA-published guidance and through EPA approval and oversight of State programs, with significant involvement of other ap-

propriate federal agencies. EPA guidance, published with the assistance from other federal agencies, could assist States in: designating watersheds; setting priorities; analysis and predictive modeling; managing the control of point and nonpoint source pollution to implement the requirements of the Act at least cost; and, promoting the protection of the water resource, including habitat protection and restoration, ecosystem health, species diversity, flood control, recreation and other important interests. Guidance could also help States to identify priority problems within a watershed and to develop monitoring programs to measure environmental changes and reduction of risk as a result of watershed activities. This watershed protection approach closely parallels the Agency's initiative in ground water protection. In May 1991, EPA issued a policy statement, "Protecting the Nation's Ground Water: EPA's Strategy for the 1990s," that promotes the development and implementation of comprehensive State ground water protection programs. Because there is a direct link between surface water and ground water, the watershed approach, coupled with comprehensive ground water protection, will truly address the totality of water resources.

It is also important to emphasize the need to maintain and support a strong research program to provide the scientific bases for these ecosystem and habitat protection efforts. Research on such topics as ecosystem processes and functions; development of ecological criteria, environmental indicators, and ecological risk assessment methods; and monitoring of status and trends is essential to the success of ecosystem and habitat protection.

Incentives

Although we believe that Watershed Planning can be an efficient and hence intrinsically attractive approach to addressing potential or actual threats to water quality, EPA also supports the establishment of incentives to promote the development of comprehensive, well-integrated and cost-effective watershed programs in the States. To be eligible for these incentives, State programs would need to be consistent with certain minimum elements set forth in the statute. Although there is currently significant enthusiasm for the watershed approach, we recognize that a great deal of effort may be required to achieve programmatic changes and to implement a comprehensive approach. For example, State agencies dealing with health, agriculture, fisheries, coastal zone management, land use and other natural resources may need to coordinate and integrate their programs to assist and participate in Watershed Management efforts. EPA supports the creation of incentives to encourage States and local entities to undertake the requisite effort. Incentives should be closely tied to the successful implementation of approved State Watershed Management programs, although we should be wary of developing a system of penalties, because these could actually detract from a State's ability to accomplish this goal. This link between accomplishments and rewards is a critical aspect of using incentives to ensure widespread application of a voluntary watershed approach.

Incentives can take several forms, notably financial and regulatory. As a financial incentive to participate, implementation of Watershed Management action strategies could be funded, if eligible, under grants and other financial assistance currently authorized under the CWA, including Sections 104(b) 106, 314, 319, 320(g) and 604, as well as under other federal statutes. In addition, we would support modifications to the State Revolving Loan Fund (SRF) to provide that projects developed under approved watershed plans and eligible under current law should be accorded priority in SRF funding, and to ensure that SRF projects will not be inconsistent with such plans.

Incentives could also be offered to States and local watershed entities that would improve nonpoint source controls, hasten progress toward water quality objectives and reduce costs. In our testimony to the Subcommittee on nonpoint sources, we endorsed the general approach of S. 1114 towards nonpoint source control, including the application of best available management measures to existing and new sources in impaired and threatened watersheds and to new sources (although not existing sources) in all other watersheds. We proposed that in lieu of these national management measures, however, States could defer to strong and broad State watershed programs that would expeditiously address the stresses in the highest priority areas. In order to qualify for this exemption, a State management program would need to include local, tailored nonpoint source management measures for significant pollutants, demonstrate that the nonpoint source controls in combination with point source controls would achieve and maintain water quality standards within twelve and a half years, and ensure that the nonpoint source controls are backed by necessary implementation mechanisms and enforcement authorities.

Regulatory incentives also may be available for point source control. For example, a State with an approved watershed program (that administers the NPDES program) could be authorized to issue a one-time, five-year extension in its NPDES permit terms in order to enable the State to address all permits within a watershed simultaneously, and thereby to coordinate permit limits so as to achieve water quality standards in the most efficient and equitable manner possible. Additionally, in those watersheds where the Watershed Management Plan provides for the attainment of water quality standards, watershed programs could encourage the greater use of trading (for other market mechanisms already authorized by law) to meet water quality standards. Furthermore, States could be granted additional time, perhaps four years, to adopt biological, ecological, and physical criteria as environmental indicators that would be consistent with their watershed programs.

States wishing to employ a watershed approach also could be eligible for regulatory streamlining of the CWA's assessment, inventory and targeting requirements. For example, we believe that watershed plans could be allowed to fulfill, or at a minimum, be coordinated with inventory, ranking, planning and reporting requirements under Sections 303(d), 303(e), 305(b), and 319 and other federal or State programs such as State Wetland Conservation Plans, USDA River Basin Plans, and CZARA programs, provided that the State watershed program meets the particular requirements of these respective programs. A consolidated and expanded priority listing system, which examines other non-chemical factors such as habitat loss and degradation, is critical for the establishment of a credible process by which States decide where to begin work in their watersheds.

In addition, a Watershed Management entity could be granted high priority to receive federal financial and technical assistance for activities such as wetlands advance identification, general permits, or mitigation banking under Section 404. Approved watershed programs or plans that have implemented wetlands advance identification with the support of EPA and the Army Corps of Engineers or have developed wetlands components that are generally at least as environmentally protective and meet other established criteria should be given general deference for Section 404 programmatic permits rather than individual permits. (Programmatic permits are issued by the Army Corps of Engineers). The Agency looks forward to discussing these and other wetlands matters with you more fully at this Subcommittee's future hearings.

Another regulatory incentive could be offered with regard to Safe Drinking Water Act (SDWA) requirements. Watershed Management entities, including public water supply systems, in primary States with approved watershed programs and source water programs (under the SDWA) could be allowed to tailor prevention, monitoring and treatment alternatives, provided that the alternatives satisfy source water protection conditions. Components to be addressed include: delineation of drinking water protection areas, contamination source inventories, vulnerability assessments, public education, source controls, enforceable policies and mechanisms, ongoing surveillance, and program updates.

It is very important to note that application of the watershed approach does not imply any retreat from current pollution control requirements. For example, existing national secondary treatment standards for municipal waste water treatment facilities, Best Available Technology and Best Conventional Technology for industrial facilities, and nonpoint source controls would remain in effect, and the focus of Watershed Management would be on reducing those stressors not addressed by EPA's "traditional" water quality programs. It is also important to emphasize that we must continue to maintain and support a strong research program to provide the scientific basis for the watershed approach. Research on such topics as ecosystem processes and functions, development of ecosystem criteria, environmental indicators, monitoring of status and trends, and landscape characterization is essential to the success of the watershed approach.

We commend S. 1114's use of funding, regulatory incentives, and relief from certain administrative burdens to reward States and local entities that undertake watershed programs on a volunteer basis. In addition, we applaud the bill's efforts to facilitate the use of trading. We believe that this voluntary approach to Watershed Management with its emphasis on financial and regulatory incentives, rather than penalties¹ is the appropriate means to promote Watershed Management, while sustaining the enthusiasm and commitment that the approach is generating.

Current Watershed Efforts

Recently, we have joined States in experimenting with watershed protection programs. EPA is working with the Association of State and Interstate Water Pollution Control Administrators to provide technical and financial assistance to accelerate

efforts by several States to adopt State-wide Watershed Management. In its pilot project, for example, the State of Washington is seeking to make the transition to a "basin approach" that will involve synchronizing within each basin the issuance of permits for surface and ground water protection, the development of Total Maximum Daily Loads, and the implementation of nonpoint source controls. In a second phase, Washington plans to broaden its focus to include more stakeholders and to integrate coastal zones, wetlands, flood control, and habitat and wildlife protection into basin management.

Although Watershed Management is not a new concept and was the guiding principle behind the River Basin Commissions formed in the 1950s and 1960s, the genesis of our current watershed efforts are several geographically targeted programs. These include: the National Estuary Program, with 21 estuaries identified in the CWA as being of "national significance"; and the Great Lakes, Chesapeake Bay and Gulf of Mexico programs, which are all very large scale, multi-faceted projects. The Great Lakes and Chesapeake Bay programs, in particular, are moving toward a "nesting" approach that incorporates a tributary or small watershed strategy into the larger framework of their programs. Each large water basin, including the Gulf of Mexico and many of the estuaries in the National Estuaries Program, are comprised of numerous smaller watersheds and ecosystems that present Unique problems. Focused management of those smaller systems—through the watershed protection approach we have described—often is necessary to achieve many of the environmental goals of the larger basin to which they belong. At the same time, management of the smaller systems needs to occur within the context of the successively larger systems in the watershed hierarchy. In this way, we believe, the great water-body programs intersect effectively with the locally-based watershed protection approach we also endorse.

THE GREAT LAKES PROGRAM

The Great Lakes represent 18% of the world's surface fresh water and 95% of the surface fresh water found in the United States. The lakes are a well-spring of biological abundance and diversity for all North America as well as a source of abundant fresh water critical to the industrial strengths of the region. The Great Lakes Program was established by Congress in 1972 through inclusion of a pollution control program for the Great Lakes under § 108 of the CWA. The program evolved over time with a focus on State management programs and included an international structure to address transboundary pollution issues in the U.S. and Canada. These international efforts eventually culminated in a U.S./Canada agreement (the Great Lakes Water Quality Agreement of 1978). EPA also works with the International Joint Commission (created by the Boundary Waters treaty of 1909) in addressing environmental degradation concerns that impact the Great Lakes ecosystem.

The Agency's Great Lakes program is a proactive multimedia program to protect and restore the Great Lakes ecosystem. In 1991, EPA, along with other federal agencies, the eight Great Lakes States, and the Chippewa and Ottawa Tribes, developed a joint five year strategy to provide a comprehensive, long-range vision to identify and accomplish environmental goals for the Lakes. The strategy, which established its priorities on a risk basis, emphasizes three long term goals: reducing toxic loadings; protecting and restoring vital habitats; and protecting human health and the health of the ecosystem's living resources. The strategy also targets efforts to priority geographic areas, thereby promoting more localized Watershed Management within the context of the Lakes as a entire system. Most recently, EPA proposed—in close concert with and at the request of the Great Lakes States—Great Lakes Water Quality Guidance that will result in a unified regulatory approach to water quality standards among the Great Lakes States.

Through our work in the Great Lakes basin, EPA has also advanced the understanding of both contaminated bottom sediment problems and promising technology to remedy those problems. In an example of effective Watershed Management, we have increased our knowledge of the sources and fates of PCBs in the Fox River/Green Bay watershed to promote the restoration of that important system. We have also acquired greater expertise in strategic conservation of habitat as a means to protect biological diversity, which, although local in focus, promotes a broader effect within the overall strategy of the Program.

As Congress considers Issues surrounding reauthorization of the CWA, we welcome the clear interest in Great Lakes issues shown by Senator Metzenbaum through his introduction of S. 1183, the "Great Lakes Clean Water Amendments of 1993." We support the bill's endorsement of Watershed Management approaches and applaud those portions of the bill that will aid in the identification and implementation of cost-effective sediment remedial options. We are working to develop

and implement a national sediment management strategy for the Great Lakes and other waterbodies where contaminated sediments contribute to ecosystem impairments.

We also strongly support the protection of the biological integrity and diversity of the Great Lakes ecosystem. While considerable work remains to be done with regard to chemical pollution, we now recognize that those efforts alone will not be adequate to restore and maintain the physical and biological integrity of the Great Lakes ecosystem. Reauthorization of the CWA should build upon the progress being made under the comprehensive multi-media approach we are now pursuing. For example, we believe that a Watershed Management approach, which integrates joint federal, State, Tribal and local action, is necessary if we are to address successfully the many non-chemical stressors on the Great Lakes system, such as physical alteration of the landscape, loss of critical habitat (which is occurring at an accelerating rate), and the introduction of exotic species, such as the zebra mussel. Strengthening the nonpoint source program also will help us to protect the Great Lakes ecosystem. We have the opportunity—and in deed, the responsibility—to protect and restore the biological and physical, as well as chemical, integrity of the Great Lakes ecosystem. Without an integrated watershed approach that addresses the ecological consequences of human activity on the Great Lakes, the Lakes will experience further losses of natural biological diversity and productivity, with concomitant losses in the economic vitality of the region. We are pleased that these principles are reflected in S. 1114.

While we welcome Congressional interest and support of Great Lakes environmental protection, we believe that there are some provisions of S. 1183 that would direct limited resources to issues that may not pose the greatest environmental risk and that in fact could be addressed under existing authorities, such as Section 319 or Section 404 of the CWA. For example, the bill would create a new "permit program" similar, but in addition, to the Section 404 program, which would continue to regulate disposal of dredged material into the open waters and confined disposal areas of the Great Lakes. EPA does not believe that these new provisions are necessary, and that, indeed, they have the potential to divert resources from the evaluation of environmental impacts in order to conduct this newer, less comprehensive review.

In addition, EPA believes the authorizing legislation needs to preserve the flexibility afforded to the Program at the regional and local watershed level to implement integrated approaches to the Lakes' complex environmental problems. For example, one of the most pressing environmental problems in the Great Lakes-contaminated sediments—will require increased flexibility in order to successfully address the issue.

The Agency does not support the use of the State Revolving Fund (SRF) for sediment remediation due to the inherent restrictions of the SRF and the additional burdens that such use would place on the fund, which is already overwhelmed by currently eligible project needs. In addition, we strongly recommend amending Section 118 of the CWA to eliminate unattainable deadlines for Agency actions. Such deadlines unfortunately have the unintended effect of causing EPA to divert scarce resources from the development and implementation of effective programs to the defense of lawsuits. We are also very concerned about the deadlines for Lake wide Management Plans (Lamps) contained in S. 1183. Those deadlines are inconsistent with the management structure of the Lamps, which includes open participatory public process that addresses the issues and interest of all Great Lakes stakeholders.

THE CHESAPEAKE BAY PROGRAM

Congress directed EPA in 1975 to investigate the causes of environmental decline in the Chesapeake Bay. To achieve this goal, EPA established a Chesapeake Bay Program Office that formed partnerships over the years with key Chesapeake Bay States, federal agencies and other interested parties such as citizen groups. After identifying the key ecological health problems of the Bay—such as nutrient over enrichment, loss of Bay grasses and fisheries resources—EPA along with its partners has worked towards collectively *and* effectively reducing these risks. A commitment to action by the States was evident from the beginning of the program. This led to strong management programs for point and nonpoint sources within the States to help restore the health of the Bay.

The Bay Program is an institutional model for a multi-State, ecosystem approach to protecting and restoring a large complex watershed. In addition to achieving significant environmental results, the Program has pioneered advances in science and technology that can be used in other large ecosystems.

In 1987, as part of the Chesapeake Bay Agreement, the Program set a goal to reduce the level of nutrients in the Bay by 40% by the year 2000 and to maintain that level—or lower—thereafter. To date, phosphorus levels in the main stem of the Bay have been reduced by 16% and nitrogen levels stabilized since 1985 although there has been substantial population growth in the basin. In addition, as part of the 1992 amendments to the 1987 agreement, the Program has achieved caps on nutrient loadings to each of the ten major tributaries, effectively limiting nutrient loads to the Bay. The Program has effectively implemented major pollution prevention efforts for nutrient management for fertilizers, integrated pest management in agriculture, and phosphate detergent and tributyltin bans.

Non-compliance rates for point source dischargers have been reduced by 70% since 1990. And finally, the toxic release inventories for the whole watershed indicate a 43% reduction in reported toxic emissions/releases from 1987 to 1990, compared to a national decrease of 22% from 1988 to 1991.

To support this work, the Bay Program has developed a sound technical and scientific data base to support its environmental targets and its focus. The Program established the scientific linkages between Bay grasses and water quality and the role of fin fish and shellfish in the assimilation of pollutants. The Program pioneered biological nutrient reduction technology for point source nitrogen and identified and quantified the contribution of airborne deposition of nitrogen to the Bay, linking water quality and air models.

The Chesapeake Bay Program has an ambitious and exciting vision for its future work in the Bay. For example, the Program will heighten its emphasis on tributaries and shallow habitat areas, including the Anacostia and Patuxent Rivers. The Program will look also into new technologies to assess air/water nitrogen exchanges, the interaction between water quality and living resources, and those interactions between land and water.

Earlier this year, Senators Sarbanes, Mikulski, Warner, Robb, Wofford and Specter introduced S. 567, entitled the "Chesapeake Bay Restoration Act of 1993." Building upon the Chesapeake Bay Program authorized in the 1987 Water Quality Act, the bill addresses priorities set out in the 1987 Chesapeake Bay Agreement and the 1992 amendments to the agreement. We are generally supportive of the concepts contained in the bill, in particular: the enhancement of federal agency cooperation and coordination; improvement of federal facility compliance; and, promotion of local and private sector participation in the development and implementation of management, conservation and restoration plans. Similarly, we believe that provisions to promote the demonstration and showcasing of various techniques for restoring and enhancing wetlands, submerged aquatic vegetation and forest riparian zones in the Bay move in the right direction. We also agree conceptually with provisions in the bill that would provide State and local governments with better tools to make sound land management decisions.

THE GULF OF MEXICO PROGRAM

The Gulf of Mexico is essential habitat to approximately 75% of North America's migratory birds, several endangered species, and economically important fisheries for shrimp, shellfish, and fish. Its coastline is longer than the Pacific Coast and nearly as long as the Atlantic Coast. Unlike most estuaries in the east and west coasts of the U.S., Gulf estuaries are primarily shallow and wind-driven. These estuaries average only eight to ten feet in depth. They are productive because of the warm climate, in-flows of nutrients, the balance of fresh and salt waters, and the vegetated habitat. About one-half of the nation's wetlands are found there and about one-sixth of the U.S. population now lives in Gulf States and is expected to increase by 26% over the next 20 years. In addition, the Gulf has four of the top ten busiest U.S. ports and 90% of all offshore oil and gas production in the U.S.

Some of the environmental challenges facing the Gulf of Mexico are crosscutting and complex in nature which will require assessment and Gulf-wide solutions while some issues are more appropriately dealt with on a more local scale. The challenges include: habitat losses; impaired freshwater inflow; nutrient enrichment from two-thirds of the continental U.S. and from coastal septic systems and agriculture among other sources; marine debris; toxics and pesticide contamination; and, coastal and shoreline erosion. Each of these problems requires long-range solutions involving many key parties across the Gulf. EPA in partnership with the five Gulf coastal States and other federal agencies, began the Gulf of Mexico National Program in 1988 to address the cross-cutting, system-wide environmental problems in the Gulf. In all, over 400 different groups and organizations are represented in an overall committee structure.

The Gulf Program is designed to be holistic in its approach and to address risks that are broad in scale and that extend to the entire ecosystem. A system-wide approach requires extensive coordination, and the Program has served as an in-the-field experiment of a full environmental partnership. We have found that the Gulf is a vast and infinitely complex ecosystem whose collective environmental threats easily overwhelm the individual capacities of federal and State environmental programs. Consequently, the Gulf program, if it is to succeed, must remain a collaborative partnership of all of the State, local, citizen and private stakeholders. The federal government must catalyze and assist in the proper and effective coordination of these activities.

In this session of Congress, Senator Graham and former Senator Krueger introduced bills to strengthen efforts for environmental protection in the Gulf. These bills, S. 83 and S. 686 respectively, generally aim to establish a strategic plan for the Gulf and to create a commission or governing body to help to direct this effort.

Because the Gulf of Mexico Program is a partnership effort among many several agencies, the best recommendations regarding what is needed in the Gulf are the principles recently articulated by our federal partners. These include: (1) some legislative recognition of the Gulf of Mexico is appropriate; (2) partnership among federal agencies should be full and shared, although one federal agency can act as the coordinating hub for cross-cutting Gulf activities; (3) the Program should develop a strategic plan which assesses ecosystem-wide (not simply local) problems and make recommendations for actions necessary to collaboratively address these Gulf-wide environmental risks; and (4) each federal partner agency should support activities within the strategic plan and implement these actions through their own authorities with funds obtained through their own appropriations process. Each of these principles will help to ensure success in the Gulf of Mexico. As such, they can serve as an initial basis for discussions regarding appropriate Gulf of Mexico legislation.

THE NATIONAL ESTUARY PROGRAM

In addition to these large waterbody programs, EPA manages the National Estuary Program under the CWA. The NEP was established in 1987 under Section 320 of the CWA. Its mission is to identify nationally significant estuaries, protect and improve their water quality, and enhance their living resources. Among the criteria for national significance is the presence of unique, threatened, or endangered species and habitats within the proposed estuarine study area.

The NEP embodies the watershed protection approach by addressing problems within the watershed as a whole rather than by focusing on one problem at a time. As a result, this program involves high levels of coordination among the many stakeholders. For each estuary designated, a Management Conference is convened that includes representatives from the State and local governments, businesses, citizen groups, academia, and environmental and other citizens' groups. The Conference identifies and addresses environmental risks to the estuary through adoption of a Comprehensive Conservation and Management Plan (CCMP).

The NEP currently includes 21 programs across the nation. Although each estuary has unique characteristics, many share common environmental problems. These include eutrophication, toxic substances and metals, pathogens, and changes in living resources and their habitats. Solutions to a number of these problems are being developed and tested in individual NEP estuaries.

The NEP is a successful program in a larger sense. NEPs are achieving consensus and results. They provide an excellent model for collaborative problem solving by key stakeholders concerned about a local resource. The NEPs have also demonstrated the value of monitoring. Monitoring is crucial in helping to define estuary functions on an ecosystem-wide basis and to determine the effectiveness of the actions taken under the CCMPs. Monitoring results can then be used for developing needed "mid-course" corrections. In addition, volunteer monitoring is often used to achieve & better understanding of an estuary's functions and to enlist citizen support in identifying and managing estuarine problems.

With respect to CWA reauthorization, Congress needs to be aware that, under current law, the NEP can provide no financial assistance to Management Conference for the oversight and facilitating of CCMP implementation. Under § 320(b), the Management Conference must coordinate and facilitate the implementation of the plan, assess the effectiveness of the plan, and review proposed federal projects for consistency with the CCMP. These statutory responsibilities cannot be carried out until the CCMP is completed and implementation begins, yet § 320 provides no grant authority to support these activities. While we cannot support a new grants program for implementation, we would not oppose authority to award grants from

currently-available funds to Management Conferences to support limited oversight activities.

We also appreciate the support expressed for the NEP in Senator Lieberman's bill, S. 815. While we agree that funding implementation of CCMPs is important, the State Revolving Funds (SRF), construction grants program and nonpoint source program already provide priority consideration to activities in approved CCMPs. Thus, we believe that States should revise their SRF funding priorities to reflect CCMPs instead of requiring a percentage of the State revolving fund to be set aside for implementation of CCMPs. The virtue of the SRF is the high degree of flexibility it offers States. Set-asides limit this flexibility and rarely match actual funding needs for the targeted areas. We believe that the major responsibility for implementation remains with the States and localities where the benefits will be realized. Nevertheless, EPA, the States and the public together have invested millions of dollars in developing CCMPs, and we agree that we must determine how we can best protect and build on those investments. Accordingly, we support a strong role for EPA in facilitating implementation.

EPA also does not support the authorization levels of \$4 billion in FYs 1994 and 1995 and \$5 billion in FYs 1996-2000. These levels are higher than national fiscal constraints will allow. We support the President's investment proposal, which would provide \$7.2 billion in capitalization grants between FY 1994 and FY 1997 to capitalize State revolving funds.

CONCLUSION

We believe each program discussed above illustrates the application of the Watershed Management approach. Each program is characterized by cooperation among EPA, other federal agencies, States, local government and the public to identify problems and implement solutions in a holistic, integrated, cost-effective way. Many of these programs also exemplify multi-State coordination. By focusing on watersheds as a whole—and the valuable ecosystems they contain—these programs attempt to protect not only the water chemistry but also the aquatic habitats for the systems' living resources. As John Muir, the father of our conservation movement, so eloquently wrote in 1911 in one of his nature journals, "When we try to pick anything out by itself, we find it hitched to everything else in the universe." Muir's quote captures the very essence of Watershed Management. Watershed Management is essential to ensure that we succeed in restoring and protecting our watersheds as sources of food, livelihood, recreation, wildlife habitat and aesthetic beauty. As we embark on a more comprehensive, nationwide approach to Watershed Management, we believe that these programs can teach us valuable lessons.

REAUTHORIZATION OF THE CLEAN WATER ACT

WEDNESDAY, AUGUST 4, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

REGIONAL ISSUES

The subcommittee met, pursuant to recess, at 9:40 a.m. in room 406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Mitchell, Lautenberg, Chafee, Lieberman, Wofford, and Baucus.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. I call the subcommittee to order.

Today the subcommittee continues its review of Clean Water Act issues and turns its attention to a number of concerns to the regions of America.

The topics we will cover today will demonstrate the differences in water issues that face many regions of the country.

At previous hearings we have examined watershed planning as a means of recognizing variances in ecosystems and types and sources of pollution. Witnesses have told us that these differences justify flexibility in the solutions we craft to address water pollution problems.

There are many programs in the Clean Water Act that already recognize these regional differences.

In 1987, Congress created the national estuary program to take a watershed approach to water quality management in the Nation's estuaries. To date, 21 estuaries are in the program. We will learn today about the progress the program has made in addressing pollution along our coast. We will also discuss how we can benefit from those lessons in encouraging watershed planning for the rest of the country and how these programs can be merged to avoid duplication.

Congress also created the clean lakes program, a small but successful program aimed at controlling pollution of our Nation's lakes. The program recognizes the differences between what happens when contaminants enter lakes compared to free-flowing rivers and streams.

The clean lakes program also took a watershed approach, recognizing the need to address pollutants at the source rather than simply eliminating the symptoms in the lakes, themselves.

Today we will learn about the special problems faced by those arid states in the west whose low annual rainfall pose unique problems in complying with national standards. We will also examine continuing problems in several of our Nation's largest ecosystems and water bodies, including the Great Lakes, Long Island Sound, and the Chesapeake Bay—all of which have programs currently in place.

We will also look at other ecosystems such as the Gulf of Mexico and the Mississippi River, which seek new programs to help them address their problems.

Finally, we will look at the special problems of some of our larger cities and other regions of the country as they attempt to comply with the requirements of the Clean Water Act.

Because of the breadth and sheer number of these issues, today's hearing will be somewhat different than the others that we have held in the past. Our hearings have used an informal format to encourage dialog. Today's hearing is going to be primarily to receive information about the specific needs of these variety of programs.

We have over 20 witnesses who have requested to give testimony. We ask that all of our witnesses be as concise as possible and confine their remarks to five minutes.

It is our intention to receive all of this testimony today, and to do our best to accommodate the busy schedules of our colleagues in the House and the Senate who have asked to testify.

The subcommittee appreciates your patience as we attempt to move through this full agenda.

Before we address some of the specific regional issues, I want to begin with some of the regional programs.

At this time, I would ask the members of the first panel to come forward as we receive the opening statements of our colleagues who have joined us today, beginning with the majority leader of the United States Senate, Senator George Mitchell of Maine.

**OPENING STATEMENT OF HON. GEORGE MITCHELL, U.S.
SENATOR FROM THE STATE OF MAINE**

Senator MITCHELL. Thank you, Mr. Chairman, for holding this hearing on the water quality issues facing our coastal waters, estuaries, and lakes.

Six years ago the congressional Office of Technology Assessment reported that,

In the absence of additional measures to protect our marine waters, the next few decades will witness new or continued degradation in many estuaries and coastal waters around the country.

Since then, witnesses before this committee and others in the scientific community have reaffirmed this basic conclusion. Coastal pollution problems range from closed clam flats in New England to closed beaches in New Jersey to a dead zone in the Gulf of Mexico, to sediment contamination in Puget Sound.

I have introduced, with Senator Lautenberg, legislation to expand and strengthen elements of the Clean Water Act related to coastal pollution. A key first step is to renew the national estuaries

program, which has helped many coastal areas address pollution problems, including communities around Casco Bay in my home State of Maine.

In addition, we need new authority to take special care of impaired coastal waters, to assure that water quality standards apply to all coast waters, to expand public education, and to assist communities in dealing with overflows of raw sewage from combined storm and sewer systems.

I look forward to comments on this coast protection legislation and to working with the committee to include the provisions of the bill in the Clean Water Act reauthorization.

I also hope that this reauthorization of the Clean Water Act can provide much-needed attention to the water quality problems of our Nation's freshwater lakes. Lakes represent an incomparable recreational resource in many areas of the country. Indeed, many Americans think of clean water in terms of the quality of the lake where they swim or boat.

Unfortunately, the EPA has reported that 20 percent of our lakes are impaired, and an additional 25 percent are threatened with impairment. When almost half our lakes are in real or potential trouble, it is time to rethink our efforts to protect lake water quality.

Section 314 of the Clean Water Act provides for some assistance to States in protecting lakes, but this effort can be improved.

I have introduced legislation building on the existing clean lakes program and expanding it in several key areas. My bill would increase research on lake quality issues, provide for development of water quality standards for lakes, consolidate and refocus existing grant programs, expand EPA support for volunteer programs for lake protection, and provide for a gradual phase-out in the use of phosphate in household laundry detergent.

These measures, in combination with the renewed efforts to control nonpoint sources of pollution proposed in the bill introduced by Senators Baucus and Chafee, will take us a long way toward cleaner lakes and improved recreational opportunities for millions of Americans.

I look forward to working with you, Mr. Chairman, with Senator Lautenberg, with Senators Baucus, Chafee, and others on this committee on these important parts of our clean water program.

I want to apologize in advance to the witnesses that, because of other duties on the Senate floor, I will not be able to stay for the testimony, but I look forward to reviewing that testimony, I know the committee will learn from these witnesses.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much, Mr. Leader.

Senator Lautenberg of New Jersey?

**OPENING STATEMENT OF HON. FRANK R. LAUTENBERG, U.S.
SENATOR FROM THE STATE OF NEW JERSEY**

Senator LAUTENBERG. I thank you, Mr. Chairman.

I am pleased that the subcommittee is addressing coastal pollution issues today. Protecting our coasts should be one of our highest environmental priorities.

Incalculable is the value to every family that spends a day together at the beach. More easily measurable, however, is the income that our States derive from the more than 160 million people who visited our shores in 1992.

In my home State of New Jersey, \$9.5 billion was collected from tourism expenditures in four coastal counties last year. Furthermore, in 1991 353,000 people provided services to these visitors in some capacity, making tourism the number one employer in the State. Such values cannot be overlooked.

Mr. Chairman, I want to focus my comments today on the goal of the Clean Water Act, which is to make our waters swimmable and fishable.

While water quality has improved since the act's enactment, we have no way to measure our progress toward making waters swimmable because States do not regularly test beach waters to determine whether or not they are safe for swimming. And where States do test their waters, EPA guidelines recommend using a monthly average to determine whether a beach is safe for swimming. But monthly averages can mask unsafe water quality that may exist on any given day.

Today, throughout our Nation, families are splashing in the waves. They believe that they are engaging in a safe activity and deriving nothing but joy and recreation. But what if the water they are swimming in is, instead, contaminated with bacteria at levels that can make them sick? How do they know that?

This is a case where ignorance is not bliss. All of those enjoying the ocean this summer have a right to know whether the water that they are swimming in is clean and safe, and yet many States use inadequate techniques to measure bacteria levels in beach water, and others conduct no water quality monitoring at all.

Furthermore, the National Resources Defense Council recently found that even when the States do monitor water and discover unsafe bacteria levels, they don't always tell the public.

A high bacteria level can cause a beach closure in one State, while in another people may be allowed to swim in water, despite equal health risks.

In an attempt to remedy this problem, Senators Bradley, Boxer, and Feinstein have joined me in introducing S. 997, the Beaches Environmental Assessment Closure and Health Act.

The beach bill will help ensure the safety and beauty of coastal beaches across the country by establishing uniform testing and monitoring procedures for bacteria and floatables in marine recreation waters. It will also require that beach-goers are notified through advisories or beach closures whenever the standard is exceeded.

A coalition of groups from across the country has written a letter in strong support of S. 997, Mr. Chairman, and I would ask that this letter be included in the record.

Senator GRAHAM. Without objection, so ordered.

[See attachment to Dawn Martin's Testimony, p. 922.]

Senator LAUTENBERG. Mr. Chairman, I, too, have other hearings and meetings, and therefore will be unable to remain.

I urge that the subcommittee add its support to this legislation, to the Clean Water Act, and in doing so to recognize the importance of protecting public health at our Nation's beaches.

I thank you once again for holding this hearing.

Senator GRAHAM. Thank you, Senator.

Senator GRAHAM. Our first panel includes Ms. Dawn Martin of the American Oceans Campaign; Mr. Richard Wedepohl of North American Lake Management Society; and Mr. George Brinsko, President of the Western Coalition of Arid States.

I would call on the members of the first panel in the order in which they were introduced for their opening statement.

Ms. Martin?

**STATEMENT OF DAWN MARTIN, AMERICAN OCEANS CAMPAIGN,
WASHINGTON, D.C.**

Ms. MARTIN. Thank you, Senator.

As you said, my name is Dawn Martin, and I am the Director of the Washington Office for the American Oceans Campaign, and the Coordinator of the National Coastal Caucus.

On their behalf, I wish to express my thanks to Chairman Graham for inviting us to testify, and for all the work that he and the committee staff have done in setting up these hearings.

In addition, I applaud Senators Baucus and Chafee for introducing S. 1114, which has served as a vehicle for discussion in these hearings.

Aquatic ecosystems worldwide are being severely altered or destroyed at a rate greater than at any other time in human history. Protection of the functions of those aquatic ecosystems have been largely ignored; therefore, we are pleased to see that the committee has acknowledged that clear hydrological, ecological, and economic basis for focusing on broader aquatic ecosystems management through its watershed planning provisions in S. 1114.

Watershed planning, however, is not a completely novel concept. Attempts have been made at the local, State, regional, and Federal levels to do successful watershed planning for many years.

Created by section 320 of the 1987 Clean Water Act, the NEP is an excellent example of comprehensive watershed management. The NEP, itself, is also modeled after the Great Lakes and the Chesapeake Bay programs.

Estuaries form transition zones between freshwater and marine ecosystems and, as a result, are among the most productive natural systems. But, in spite of their high value, intense use, and frequent overuse, estuaries only recently have become recently recognized as a unique and severely depleted resource.

The NEP is designed to identify estuaries of national significance and to establish a process for improving and protecting their water quality, habitat, and living resources.

In the past several years, we have compiled comments on the NEP and, as a result, we have developed a list of priority problems and potential solutions to strengthen the program. These suggestions essentially became the basis of Senator Lieberman's Water Pollution Control and Estuary Restoration Act, S. 815.

Similar frustrations with the program were experienced across the country, and therefore participants have called for a national solution to address these problems. Essentially, there are five main provisions which would be strengthened by incorporating the language of S. 815, as well as specific parts of the Coastal Protection Act introduced by Senators Mitchell and Lautenberg. These include:

Number one: mandating implementation of CCMPs. S. 815 clarifies that implementation of CCMPs is a nondiscretionary duty of EPA. S. 1114, on the other hand, expands section 320 to provide grants to pay for activities necessary for the implementation of CCMPs. It also reiterates that implementation activities are eligible for SRF funding.

S. 1199 also acknowledges the need for Federal involvement in implementation by extending management conferences to oversee implementation of improved plans.

Two: requiring strict time frame guidelines. The five-year time frame allowed under section 320(e) should not be extended simply to allow the planning process to continue. S. 815 sets forth scheduling deadlines to ensure a timely planning and implementation process and to discourage the process from stalling.

S. 1199 also adds language to tighten up the planning process by requiring that implementation plans include a detailed financial plan indicating the Federal, State, and local funds needed to implement identified corrective actions.

Third: increasing the role and visibility of EPA in the program. S. 815 requires EPA to participate more actively in ensuring full coordination among the appropriate agency. EPA is also directed to promulgate guidelines setting out criteria for the development, approval, and implementation of CCMPs.

S. 1199 requires EPA to review and report on the progress of the management conferences.

The fourth point is the need to strengthen citizen participation. S. 815 acknowledges that a public involvement is a vital function of every conference, and it expands the participation at all levels of the program.

Finally, we need to include a funding mechanism to ensure implementation. Due to State budget shortfalls and the lack of Federal support, many States have been unable to fully implement their management plans. It is imperative that additional resources be provided if implementation is to be successful; otherwise, the Federal funds expended for crafting the plans will be wasted.

S. 815 increases funding for the SRF program at \$4 billion and then to \$5 billion, and creates a set-aside specifically for the CCMP implementation.

To recap, assuring the development of the most efficient plan for tackling pollution problems within estuaries is the major theme of S. 815. Senator Lieberman is to be commended for his focus on the economic and environmental costs associated with cleaning up these valuable watersheds.

We encourage the committee to amend section 607 of the bill to incorporate the Lieberman language.

The committee's version of the Federal Water Pollution Control Act can easily be amended to address our concerns about the NEP.

We strongly support the above-mentioned provisions, but recognize the need for implementing the CCMPs, and we also recommend linking the national estuary program with the watershed provisions of the committee's bill.

Title one and title three both provide an opportunity for linking the national estuary program with watershed provisions.

I am out of time, but I wanted to just quickly mention the Mitchell-Lautenberg Coastal Protection Act also includes several provisions that we are in support of, in addition to the national estuaries language, including the creation of a coastal environment toxics release strategy, focusing on the effect of industrial discharges, development of a national marine water quality education program, and that the bill significantly strengthens requirement and enforcement provisions for marine sanitation devices.

It also calls for the development of marine water quality criteria and standards, and significantly restricts ocean beach discharges.

The final provision or bill that I wanted to mention was Senator Lautenberg's beach bill. Mr. Lautenberg did a tremendous job in identifying that for me, so I won't expand on it.

I also was going to ask that the letter that Senator Lautenberg mentioned be incorporated in the record.

So I'd just like to say that we strongly support the inclusion of the beach bill, certain provisions of the Mitchell bill, as well as the Lieberman bill when this committee reauthorizes the Clean Water Act.

Thank you.

Senator GRAHAM. Thank you very much, Ms. Martin.

We have been joined by the ranking member of the subcommittee, Senator Chafee of Rhode Island.

Senator Chafee?

Senator CHAFEE. Thank you very much, Mr. Chairman. I apologize for being a few minutes late.

I don't have a statement, and we've got a long list of witnesses, so I'll do everything I can to cooperate to move right along.

Senator GRAHAM. Thank you very much.

Mr. Wedepohl?

STATEMENT OF RICHARD WEDEPOHL, NORTH AMERICAN LAKE MANAGEMENT SOCIETY, MADISON, WISCONSIN

Mr. WEDEPOHL. Thank you, Mr. Chairman.

Please know that our organization is also very appreciative of the opportunity you have provided for us to testify.

As you noted, today I am representing the North American Lake Management Society, which is an international organization that is comprised of citizens, lake communities, scientists, engineers, lake biologists, lake management professionals, and many others.

Recently, I have also served as chair of Water Quality 2000's Urban and Rural Runoff Challenge Team, which focused on defining solutions to our Nation's water quality problems that originate from rural and urban runoff.

In my real life I am employed and get my paycheck from the State of Wisconsin's Department of Natural Resources, where I oversee the nonpoint source and lake planning program.

I am here today on behalf of our Society to offer to this subcommittee testimony relative to S. 1198, which you heard Senator Mitchell describe very eloquently; and also S. 1114.

I might add that we are very fortunate that Senator Mitchell hails from a lake State, and also our chairman hails from a State that is very rich in lake resources.

Let me begin by stating as strongly as I possibly could our support for S. 1198, Senator Mitchell's bill. This is without a doubt the finest piece of legislation our organization has had the opportunity to comment on. Our compliments to Senator Mitchell and the staff who have worked hard over the past three years to put this piece of legislation together.

S. 1198 has many fine provisions—provisions which build upon the 17 years of experiences and lessons learned through a highly successful section 314 clean lakes program.

While our Nation's lakes would certainly benefit if this bill were adopted independently, it would be our preference to see it rolled in its entirety into the Clean Water Act amendments. It is our belief that by doing so the many strengths of this piece of legislation would spill over and help out the other new nonpoint source and watershed initiatives which are an important part of S. 1114.

The bottom line is we don't feel that it is necessary to start over again and begin at the bottom of the learning curve. Much of the lessons have been learned.

You have also heard many of the facts and figures on the quality of our Nation's resource. I'm sure those figures haven't always been the same, but the gist of it is there are still a lot of problems.

You also heard about the critical nature of nonpoint source pollution watershed approaches and involving citizens in the effort. We certainly add our support to this.

However, what has not been stated very well, we don't believe, is the critical need that exists to target and to focus our newer nonpoint source and watershed initiatives on our most sensitive fresh-water resources, our Nation's lakes and reservoirs.

The success of the section 314 program has never been questioned. The original model was based on sound science, was driven by needs identified at the grassroots level, and has been implemented with the principle of the need to build strong State/local partnerships to solve watershed problems.

It has received several accolades. NRC recently called it a model of Federal restoration efforts with regard to its emphasis on the causes of lake problems and local and State participation.

EPA's former head of Office of Water, Lajuana Wilcher, recently described the program as a quintessential example of empowering citizens to work closely with their local, State, and Federal Governments in achieving a common goal.

And recently an EPA review, which I have copies and will give you, also highlighted its successes.

Finally, I think it is important to note that this program was accomplished with very little budget support. There are some issues there that we can't get into now. But it has operated on an annual appropriation of less than \$10 million per year.

Now, with Senator Mitchell's bill, there exists a wonderful opportunity to build upon these past successes to revise and fine-tune

and broaden the scope of this program. I won't discuss the individual sections Senator Mitchell did, but I will say that they all are significant and important, whether it be the research, the water quality standard components, the national phosphate ban whose time has certainly come, and program coordination and education elements of the bill.

Overall, it is an extremely well-conceived and developed and fine-tuned bill. It has few flaws and is a logical extension of the 314 program.

However, given the low funding—and I know you have heard this before—provided by this bill, we feel it is essential that lakes be given special attention or given some reference into our new nonpoint source and watershed initiatives that are proposed in S. 1114. It is important that they be targeted.

Our momentum has been on stream and river focused efforts, and lakes have not had the attention because most of our lakes have not had point sources going into them.

In regard to S. 1114, NALMS is certainly supportive, while we have a general sense the bill is perhaps more top-down than bottom-up in design and maybe not enough emphasis has been placed on the need to develop State and local infrastructure.

Certainly some of these weaknesses would be corrected if the citizen-initiated clean lake projects posed in 1198 were effectively incorporated into this bill.

As stated earlier, and I can say it again, the State/local partnership structure and model for effective, voluntary local watershed management has already evolved through the clean lakes program.

Finally, one comment related to section 402(p), the stormwater element of the bill. I have had the experience of having to work with the stormwater program and have had the opportunity to go through its development with EPA and its implementation in the States.

NALMS and many others of us are still very concerned that there exists little incentives for State or local programs to address control of post-development stormwater runoff under section 402(p).

Presently, EPA and State implementation of the permitting program does not effect post-development runoff. It is not well understood. A lot of the States already deal with this independently, but those States that don't have their own legislation are not doing it very well.

New construction activities greater than five acres in size, for instance, are required to have stormwater permits. These stormwater permits are for the construction activities. Silt fences are put in, mulching is done, and whatever, to control sediment. Stormwater is controlled during construction. However, there are no requirements that post-construction development controls be part of this.

For instance, the five-acre site could be completely paved over and water would run off and go directly into the lake without any controls whatsoever.

We feel that perhaps another section needs to be added to this bill to address this weakness.

We sincerely appreciate the courtesy and consideration you have extended to us.

Thank you.

Senator GRAHAM. Thank you very much.
Mr. Brinsko, Western Coalition of Arid States?

**STATEMENT OF GEORGE BRINSKO, PRESIDENT, WESTERN
COALITION OF ARID STATES, TUCSON, ARIZONA**

Mr. BRINSKO. Good morning, Mr. Chairman and members of this subcommittee.

I am the President of the Western Coalition of Arid States, otherwise known as WESTCAS. I am also the Director of Wastewater Management for Pima County, Arizona.

WESTCAS has requested the opportunity to testify before your subcommittee in order to inject an arid west perspective in these discussions in the clean water reauthorization.

The Western Coalition of Arid States was formed in 1992 by a group of western water and wastewater agencies concerned about the manner in which water quality and water resource management issues were being addressed in states throughout the arid west—areas with less than 15 inches of annual rainfall.

In the last 18 months, WESTCAS has attracted more than 50 members from five western States—Arizona, California, Colorado, New Mexico, and Nevada. Our main objective is to assist in the development of water quality regulations, policies, and laws which promote the protection of arid and semi-arid ecosystems throughout the west.

I moved to Pima County from Pittsburgh, Pennsylvania, 14 years ago to establish the first regional wastewater treatment system in Arizona. One of my first, most vivid experiences, upon my arrival, was standing beside the Santa Cruz River, a river with no water. Exhibit No. 1 will illustrate that.

The arid west is laced with arroyos and dry rivers such as the Santa Cruz. They are actually ephemeral streams. These streams only flow in direct response to one of our periodic powerful rainstorms, as illustrated in Exhibit No. 2 of our submittal.

I want to emphasize from the outset that WESTCAS supports the goals and objectives established by the Clean Water Act. Our concerns rise from the application of the act to the arid west environment. Concepts and regulations that make perfect sense when developed in terms of wet ecosystems have major flaws when applied to arid west water and wastewater situations.

WESTCAS members and other water and wastewater agencies must perform a balancing act between competing forces. On one hand, we must fulfill our mandated responsibility to protect the environment by meeting NPDS permit requirements but, on the other hand, we must convince our elected local officials and ratepayers that we are spending increasingly limited resources wisely and efficiently.

It is difficult for us to justify expending millions of dollars to comply with increasingly stringent standards for effluent discharges when such additional improvements will result in no measurable net environmental benefits.

The west needs the flexibility to adapt water quality programs to local and regional ecosystems and conditions, particularly in the absence of federal dollars for these national mandates.

When effluent is discharged to certain reaches of these ephemeral streams, lush riparian ecosystem is often created, as shown in Exhibit No. 3. We believe that we have a major responsibility to protect such ecosystems.

The reauthorization needs to address the issues essential to the management of the water and wastewater resources of the arid west. We respectfully request the committee to add an "Arid West" Section to S. 1114, with a finding that recognizes the unique nature of arid west ecosystems.

We urge the committee to consider the 14 amendments attached to our written submittal in drafting the "Arid West" section of the bill to address these special needs. To name just a few: authorize and fund research to develop appropriate water quality criteria; the utilization of reclaimed water; the interaction between the environmental, social and economic effects of policies, regulations, and permits; and the use of biomonitoring to act as a warning signal.

WESTCAS has prepared specific language and comments on these issues for the committee's consideration in the reauthorization process. However, in recognition of the committee's time constraints, I will not review all these statements at this time, but I would like to address the need to emphasize research in a reauthorization legislation.

WESTCAS believes that there is only one way we can be certain of protecting our arid ecosystem, and that is for us to conduct the basic scientific research and demonstration needed to identify what is there and what is needed to protect it.

There is a very real danger that current federal policies are simply shifting the cost of such needed research and demonstration projects to local jurisdictions. Congress can achieve tremendous economies of scale by adopting a regional approach to the science of arid lands/water quality management.

Both the federal government and many western interest would benefit from a federal partnership on these projects.

WESTCAS urges the committee to add a "Research Section" to S. 1114, including authorization language and suitable appropriations, to encourage the development and implementation of research and demonstration projects to the arid west.

As part of this "Research Section", WESTCAS requests that this subcommittee incorporate into the act the authorization for the establishment of a regional Water Quality Research Project. This would create a program to conduct the research needed to develop appropriate water quality criteria documents for arid ecosystems throughout the west.

Even though we believe this research program is already authorized in the act, we would like the subcommittee to give its direct authorization of this program.

In closing, Mr. Chairman and members of the subcommittee, on behalf of WESTCAS, I would like to thank you once again for allowing me to appear before you.

Senator GRAHAM. Thank you very much, Mr. Brinsko.

I want to thank all of the members of this panel for an excellent, concise presentation on programs that are already in effect or pro-

grams that you recommend to take account of some of the special needs of the arid west.

I would like to ask a few questions.

First, Ms. Martin and Mr. Wedepohl, in terms of the national estuarine program and the national lakes program, both of those were established in response to a set of problems that were seen within those two particular types of water bodies in America. How well do you think the two national programs in their years of existence have dealt with the problems that lead to their original establishment?

I guess, to put it another way, if you had laid out the doctor's diagnosis of the illness at the time the programs were adopted, has the prescription those programs were administered helped make the patient better?

Mr. WEDEPOHL. Absolutely, with reference to the 314 clean lakes program. I was around and involved with the program, although I was barely around when the program first got started. We started in Wisconsin and the EPA program was adopted after it.

I think the original approach was very sound and recognized the interdisciplinary problems of lakes and recognized that pollution sources come from a variety of places, not just point sources, and recognized that once things get into lakes they tend to stay there and you've got sediment problems.

It recognized that citizen initiatives are important. If the citizens are concerned locally and they want to do something, they can become involved. And if they do become involved, by golly, they find a way to get the problem done.

Probably one of the strengths of the clean lakes program is that we didn't have a lot of understanding of the problem back in the early 1970's. We are still learning. And perhaps as a result of that the flexibility that the program offered to the States has turned out to be a very strong asset.

It was not very prescriptive. It said to go out and assess the problems, find out where they are coming from, and come up with the recommended solutions, whether it be nonpoint source or point source control, or whatever—septic tanks, whatever.

As a result of that, there was a great deal of monitoring done. There was some research, better understanding was accomplished, citizens got involved, and the program has gone on from there and has been very successful.

Senator GRAHAM. Could you give an example of a specific water body in your State or elsewhere that has benefited by this program?

Mr. WEDEPOHL. I sure can. I could give some in Florida, too. But one I recently finished working on, Lake Delavan, which now Secretary Aspin was very much involved with and took a personal interest in. It was a very large lake in southeast Wisconsin, close to Chicago, very important to our tourism industry, and so on. It was sewered as part of the original Clean Water Act requirements, and point sources of pollution were actually diverted away from the lake at a cost, I might add, back in the late 1970's, of \$40 million.

The lakes program got involved when all the citizens said, "Wait a minute. Our lake hasn't gotten any better. As a matter of fact, it has gotten worse."

They got involved in the clean lakes program. A cooperative agreement with the U.S. Geological Survey was set up to actually measure what is coming into the lake. Detailed watershed inventories were conducted as part of our State nonpoint source program. A bit of the Corps of Engineers has been involved. A whole variety of agencies got involved. Citizens took initiative on doing this and cost-shared the program.

As a result of the monitoring effort, it was determined that we removed the point sources, and they were the most important source of the problem at the time, but they weren't the only problems. The other problems were the nonpoint source problems which have been corrected.

In fact, every single land owner in this over 15-square-mile watershed, because of the local initiative, has cooperated and has implemented BMPs on the land. There are still some problems with the new development, which I mentioned has stormwater to deal with.

The other thing was that we cooperated with the Fish and Wildlife program. Because of the degradation that had occurred from the past point sources, the fisheries had degraded. The lake was left with a rough fishery rather than the sport fishery it used to have. These fish had the nasty habit of trying to make their habitat the way they liked it and continued to exacerbate the problem. They'd stir up the bottoms and they'd recycle nutrients and things like that, and the algae blooms would continue.

So we cooperated and, through the use of some fish and wildlife funds the lakes were treated and the fish removed and restocked.

Finally, the lake sediments were treated with alum to lock phosphorus in the lake sediments.

It was a comprehensive approach, but the final result is, because of the citizen involvement again, principally, we have a very, very successful clean lakes project. The lake has gone from one where you couldn't swim to one where people are probably swimming in it too much now. It is almost a problem with the boats.

Senator GRAHAM. Thank you very much.

Mr. WEDEPHOL. You are welcome.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. Mr. Wedepohl, in Wisconsin have you banned phosphates?

Mr. WEDEPHOL. Absolutely. We originally had a sunset clause, which everyone was concerned about after we banned phosphates, because our legislators were concerned that the clothes wouldn't be as white and all our washing machines would break down. It wasn't even an issue any more.

Senator CHAFEE. OK. And do you see the results?

Mr. WEDEPHOL. The results have shown up mostly in the measurements at our wastewater treatment plants where phosphorus loads to the treatment plants have been reduced approximately 30 percent.

I think the national average is something like 20 percent reduction where States have adopted bans. I think 20 States have adopted bans.

Senator CHAFEE. What do the principal detergent manufacturers say? How do they do it? Do large manufacturers just do it, not include it any more?

Mr. WEDEPOHL. Absolutely. I have the good fortune of having a brother-in-law who is in the upper echelons of Proctor & Gamble, and we talk about this all the time, so we have something to talk about.

Senator CHAFEE. You bore from within, do you?

Mr. WEDEPOHL. He says the bill—

Senator CHAFEE. So what do they do? We've got to make these answers crisp, because I don't have much time..

Mr. WEDEPOHL. I'm sorry. There are other builders in the detergents and the new detergents are just as effective. The distribution problem is—

Senator CHAFEE. So it works? And then, in the States that don't ban it, does somebody like Proctor & Gamble still have it and sell it in those States?

Mr. WEDEPOHL. I'm not sure if they still maybe have a few products.

Senator CHAFEE. In other words, it would seem to me if, because of the national distribution system, if you've got several key States you'd think it would be simpler for the manufacturer just to ban them all—

Mr. WEDEPOHL. Absolutely.

Senator CHAFEE.—and not have any of it for the distribution purposes. Well, I guess that's up to us to find out the answer to that.

But outside of what you see within the treatment plants, do you see the results of it in your lakes with less algae and so forth?

Mr. WEDEPOHL. It is hard to measure because of the nonpoint sources and other things that are still dominant.

Senator CHAFEE. At any rate, it is a major step that we could take.

I must say I'll tell Senator Mitchell what you said about his legislation. That will please him. Any witness that comes before one of these committees and says about a Senator's legislation, "This is without doubt the finest piece of legislation our organization has ever had an opportunity to comment on," I think Senator Mitchell would do about anything you want for that.

I would also just briefly comment on what Ms. Martin said. This is coming home to us right now when she talks about the value of wetlands for flood overflow areas. Certainly that has come home to us in the tragedies that are taking place in the middle of our country right now.

You say, "Protection of the functions of our aquatic ecosystems such as pollution control, fisheries, and wildlife support, floodwater storage, and groundwater recharge have been largely ignored." That's tragically so, and it is coming out increasingly with this terrible situation that is occurring in the middle of our country.

Thank you very much, Mr. Chairman.

Senator GRAHAM. Thank you, Senator Chafee.

We have been joined by the chairman of the Environment and Public Works Committee, Senator Baucus of Montana.

· Senator Baucus?

**OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR
FROM THE STATE OF MONTANA**

Senator BAUCUS. Thank you very much, Mr. Chairman. I have a statement to submit for the record and some questions.

Senator GRAHAM. Your statement will be included in the record. [Senator Baucus' statement follows:]

**STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF
MONTANA**

Good morning ladies and gentlemen.

I want to commend Senator Graham for the development of a very informative series of hearings on key issues related to the core programs of the Clean Water Act, including sewage treatment funding, toxic control, and nonpoint pollution control.

Today we look into a range of the very important regional clean water issues. From Boston Harbor to the Gulf of Mexico and from San Diego to the Great Lakes, citizens and local governments are working to clean-up and protect water quality.

I am especially pleased that we will hear from witnesses on the progress of the clean-up of Chesapeake Bay. It is almost impossible to overstate the environmental and ecological importance of the Chesapeake Bay. It is also almost impossible to overstate the seriousness of the threats to the quality of the Bay.

The Chesapeake Bay program has been a valuable model for the development of regional water quality initiatives. I look forward to hearing from our witnesses on the successes and any failures of the Bay program to date and any suggestions of lessons learned from this effort.

Efforts to protect Chesapeake Bay lead directly to the National Estuary Program and the many successful projects to protect these vital coastal waters. We need to continue the National Estuary Program and expand existing authorities of the Act to protect coastal waters and I look forward to hearing the ideas of witnesses in this area.

I know first hand how valuable to focused effort to protect an impaired or threatened waterbody can be. In my home State of Montana, we have made substantial progress in protecting the Clark Fork River and Lake Pend Oreille. Our clean water reauthorization must build on these constructive regional projects.

I am also pleased that we will be learning more about the single most outstanding freshwater resource in the world—the Great Lakes. While we have clearly made progress in improving water quality in the lakes, we have a very long way to go. This effort is complicated by the special problem of persistent and bioaccumulative toxics in the lakes.

We will also be hearing suggestions on steps to expand protection of freshwater lakes around the country. Lakes provide an exceptional recreational resource for millions of Americans. I have many fond memories of times spent on Flathead Lake in my home State of Montana. I hope that our clean water legislation can expand and strengthen our clean lake program.

Thank you, Mr. Chairman.

Senator BAUCUS. I would just like to ask Mr. Wedepohl about water quality standards in lakes. I assume it is your view that we need to develop one?

Mr. WEDEPOHL. Absolutely.

Senator BAUCUS. In addition to rivers and streams and so forth, could you just expand on that point, please?

Mr. WEDEPOHL. Absolutely. This is an issue that our organization worked on for almost the last ten years because we became so frustrated with the lack of water quality standards for lakes. How do you tell if you have problems or not if you don't have clear standards? What should we be expecting in this lake?

How do you give 305(b) reports any credibility if you don't have any standards or criteria on which to base them on? How do you control stormwater runoff? How do you deal with new development

and set limits on such? How do you do TMDLs if you don't have criteria or standards to base them on?

That's absolutely essential. You need water quality standards for lakes. They haven't been developed yet because most of our problems have been with point sources going to streams.

We need them. They have to be done.

Senator BAUCUS. If we have water quality standards for lakes because we have been dealing with point sources, then how do we begin to develop water quality standards for lakes?

Mr. WEDEPOHL. A lot of the work has been done already. I think, again, Senator Mitchell's bill has done a great job of structuring this. You classify lakes—for instance, a favorite lake of yours, Flathead Lake, is exceptionally high water quality and is classified as a multi-recreation water body. It is certainly an outstanding water resource.

Once you have that initial classification, some wildlife lakes, for instances, are more naturally eutrophic and have more nutrients in them and that is fine.

You classify lakes by their use initially, and then you take a look at the achievability, i.e., what are the background conditions? What was this lake like before we started doing all these nasty things to it? And you take a look at what that condition was like, and then you end up setting an objective standard on what that lake can achieve, whether it be for phosphorus in a lot of our lakes in the midwest, or nitrogen in lakes in your area.

Senator BAUCUS. I agree. This is Flathead Lake that Mr. Wedepohl is talking about. It is the largest natural freshwater body west of the Mississippi. It is potable.

Senator GRAHAM. It's near Kalispell?

Senator BAUCUS. That's right. You were there recently. That's right. It is about 45 miles long, and it is about 7 or 8 miles wide, and it is a wonderful lake.

Senator GRAHAM. I will certify it is a beautiful lake, and for the remaining weeks of the summer that's not a bad place to be.

Senator BAUCUS. And I will be there. As soon as we get budget reconciliation passed that's where I'm going to be.

Thank you very much.

Senator GRAHAM. Ms. Martin, I would like to ask you the same question that I asked Mr. Wedepohl, except in relationship to the estuarine program. Using a specific example of the problems that led to the establishment of this program, how effective has the program been in ameliorating those problems?

Ms. MARTIN. I, too, would like to say that I think the program has been extremely effective. It has taken time to develop and get to the stage that we are at now.

I worked most closely with the 17 estuaries that have been on line for a few years with the program directors from each of those estuaries and the environmental representatives that sit on the citizens advisory committees in several of those States. I think Long Island Sound is a good example.

You can hear people talking in complete disbelief about how years have gone by when citizens have tried to get both States—Connecticut and New York—to talk to one another, and it was literally impossible until the national estuaries program came into

being, and now they are working together and have just recently submitted their comprehensive management plan for approval into EPA and is in the process, and so soon that will be underway.

The citizen advisory committees—I give the example of the Santa Monica area, which has gotten people who didn't even realize that the Santa Monica Bay was actually an estuary, and through the restoration project there they have held many conferences and workshops, and they've got people understanding the difference between point and nonpoint source pollution, and people advocating, and actually individual citizens paying to have their own public service announcements aired to educate people about what they put in their drains ends up in their local bay.

Some of the problems that—the program isn't great now, and that's why we have been working so closely with Senator Lieberman to straighten up some of the provisions that we think would really make the program a lot stronger.

In particular, those are increasing the role of the EPA, like I mentioned. There has been a lot of inconsistency in the staffing level and the involvement of EPA and different offices, and in that case some offices are able to function much more efficiently than others just because of the sheer lack of resources.

There needs to be more citizen involvement from those programs in Puget Sound, for example, and, like I mentioned, in Long Island Sound—places where they have had successful programs. They are starting to talk amongst each other, and we have been able to provide an opportunity for them to do that. We had a conference in Puget Sound last year to bring program directors together so they could provide a technical support network for one another.

So I guess there are a lot of different examples I can mention about the strengths and the weaknesses, but just to say it is an ongoing process that I think is important to strengthen and to work with, because it shows a great likelihood of success in the end.

Senator GRAHAM. I only have a few moments left in my time, and then at the conclusion of this I see Senator Sarbanes has joined us. I'd like to call on him for his statement, and then we'll return to panel one.

We have also been joined by Senator Lieberman, who has been referred to in glowing terms by virtually all of the members of panel one, and those who have not referred to you are anticipating the chance to do so as quickly as possible.

Senator LIEBERMAN. Perhaps I should remain silent.

Senator GRAHAM. After Senator Sarbanes, I will call on Senator Lieberman for any comments or questions that he might have.

Senator LIEBERMAN. Thank you.

Senator GRAHAM. But let me use my remaining moments to ask this question.

There has been some concern about both the estuarine program and the lakes program having a major and appropriate emphasis on research and understanding, but is there an adequate link to implementation to those steps that will then be necessary in order to put that research to most effective purpose in terms of accomplishing the objective?

Any comments that you might have, as briefly as possible, on the implementation aspects of these two programs?

Ms. MARTIN. That's what we would classify as the key problem with the current program, that there isn't the strong mandate to enforce implementation. Senator Lieberman's bill does do that, and that's what we would recommend happen.

Mr. WEDEPOHL. From the lakes' end, the Clean Lakes Program has worked exceptionally well. The scientists and lake citizens—the citizens find these scientists, and it has gone very well although there are a lot of weaknesses. The initial start-up research kind of faded away as we got into acid rain and a lot of other issues. Some of these good researchers have moved on. I think it is time to come back again.

Senator GRAHAM. Mr. Brinsko, I'm going to have a couple of questions for you, but there will be an interlude here as we call on Senator Paul Sarbanes, a United States Senator from the State of Maryland, to share with us his thoughts on any issues relative to the Clean Water Act, but particularly the Chesapeake Bay.

Senator Sarbanes?

**STATEMENT OF HON. PAUL S. SARBANES, U.S. SENATOR FROM
THE STATE OF MARYLAND**

Senator SARBANES. Mr. Chairman, thank you very much. These are difficult days right now, and I appreciate the opportunity to make my statement.

You will be hearing later Mr. Will Baker, the President of the Chesapeake Bay Foundation, Jeffery Coy is Chairman of the Chesapeake Bay Commission and Member of the Pennsylvania House of Representatives, and Caren Glotfelty is from the Pennsylvania Department of Environmental resources.

I have a long, comprehensive statement that I'd like to submit for the record.

Senator BAUCUS. No. We want to hear every word.

Senator GRAHAM. But in case you feel restrained, Senator Sarbanes, be assured that your total record will be part of the official record.

Senator SARBANES. I think we'd better put it to a vote of the committee, Senator Baucus.

I'll just do a quick summary of it.

I appreciate this opportunity to testify on the clean water reauthorization, and specifically the Chesapeake Bay restoration program.

I commend the committee for moving so expeditiously to reauthorize and strengthen the Clean Water Act, a fundamental building block to our national effort to clean up the Nation's waterways, and particularly important to us in Maryland to restore the water quality and the living resources of the Chesapeake Bay.

Reauthorization of this act, with continued funding for State sewage treatment revolving funds, new initiatives to address non-point source and toxic pollution, and to develop effective watershed programs are, among other issues, absolutely essential.

The Chesapeake Bay was recently featured in the cover story of the National Geographic. It is called, "Hanging in the Balance: Chesapeake Bay."

Now, Will Baker from the Foundation—just to show how effective he is—has brought half a dozen or more copies in order to furnish one to each member of the subcommittee. That's why he is so effective in fighting for the Chesapeake Bay. We commend that article to you.

It says we are fighting hard now to restore this great natural resource to its essential health. This committee has an important opportunity to help tip the balance in favor of restoration by including the Chesapeake Bay Restoration Act, which the six Senators from the Chesapeake Bay area—the two from Pennsylvania, the two from Maryland, and the two from Virginia—have all joined together in cosponsoring in this Congress, as we earlier had done in past Congresses when we had the precursor to this legislation included in the previous Clean Water Act.

This year marks the tenth anniversary of the signing of the first Chesapeake Bay agreement, which brought the Federal Government, Maryland, Virginia, Pennsylvania, and the District of Columbia into an arrangement to work together to restore the bay.

We have made substantial progress over this decade, and the cooperative Federal, State, and interstate management structure established by the program has provided a framework, not only for the restoration of the bay, but it has also been a model for other estuaries around the country. We had long discussions recently with Senator Chafee about Narragansett Bay, and the west coast people up in Puget Sound have also been very much involved. We have heard about efforts on Long Island Sound.

The bay program has pioneered pollution prevention techniques, many of these applied at the State level—this has really energized the State government—such as phosphate controls, bans on toxic boat paint, nutrient management efforts, programs to reduce pesticide use on crop land.

With the signing of the Chesapeake Bay agreement in 1987 and the 1992 amendments, a comprehensive set of goals was adopted, and we have undertaken an ambitious program to achieve improved water quality and living resources productivity including reducing by 40 percent the nutrients by the year 2000.

The level of public support and the degree of cooperation and coordination among all parties have been unparalleled. The Federal role through all of this has been crucial. In fact, the Federal Government has served as the glue that holds the thing together and the catalyst that moves it forward.

We are showing demonstrable results—reduction in phosphorus discharges. The bay industry and sewage treatment plants lead the Nation in compliance with pollution discharge requirements. Submerged aquatic vegetation is making a comeback.

The authorization this committee gave us for the bay program in the 1987 Water Quality Act has been a successful endeavor.

We have made great progress, but we still face some very tough problems. Runoff from farms, in city streets, toxic chemicals, pollution growth and development, putting enormous pressure—many of the bay's living resources and the habitat which supports them are in decline.

We are asking you to include the Chesapeake Bay Restoration Act in this Clean Water Act. It builds on the previous program.

It includes new Federal initiatives to improve cooperation and coordination among the Federal agencies.

It has provisions to have better compliance by Federal facilities. We have a large number of Federal facilities around the bay.

It establishes a new program to encourage citizen and private sector stewardship of the bay watershed. It is very important.

We have a very good program working, and you'll hear more about it from the people who are going to testify in the panel.

It provides support to State and local governments in terms of collecting and analyzing information so better land use management decisions can be made.

It authorizes a habitat restoration demonstration program, provides funding to assist in implementing toxic reductions, pollution prevention, and management actions.

I understand that the administration looks kindly or favorably on these proposals.

This Restoration Act was developed in consultation and cooperation with the States, with the private groups. It has the strong support of the Chesapeake Bay Commission, the Foundation, and the congressional delegation from the region. I mentioned the six Senators. There is also a group in the House of Representatives that is strongly supportive of it.

I have a number of letters from organizations in support of the legislation that I ask appear in the hearing record following my statement.

Senator GRAHAM. Without objection.

Senator SARBANES. Mr. Chairman, we think this is a very important initiative. We think your previous response has produced very constructive results, and we very much urge its incorporation into your reauthorization of the Clean Water Act. This legislation is co-sponsored and strongly supported by my colleague, Senator Mikulski, by the two Pennsylvania Senators, Senators Wofford and Specter, and by the two Virginia Senators, Senators Warner and Robb.

We used to fight about the bay. We used to have shooting wars between Maryland and Virginia about the bay and drawing on its resources. Fortunately, we have passed well beyond that stage and we are now working together. We hope the committee will continue to provide us some glue and some catalyst at the same time.

Thank you very much.

Senator GRAHAM. Thank you very much, Senator, for a very excellent and encouraging statement about what has occurred in the Chesapeake Bay.

Are there any questions by members of the committee for Senator Sarbanes?

Senator BAUCUS. Yes, Mr. Chairman.

I want to thank you very much for your efforts. I have been very impressed, with the Senators of States involved with the Chesapeake Bay program, beginning with Senator Mathias. I think Senator Mathias took the lead, and everyone associated with the Chesapeake Bay owes a great debt of gratitude to him and to you and Senator Mikulski and other Senators for following the same tradition as Senator Mathias.

I might say that the same compliments go to Will Baker. I was very impressed with him when he testified before this committee.

It is not an exaggeration to say that he is one of the more impressive witnesses who have ever appeared before this committee. I can see why the bay program is doing well. It is not only your leadership—yours and Senator Mikulski—but also the very excellent work of Will Baker and his associates.

Senator SARBANES. I appreciate those remarks, and the citizen participation in the bay cleanup is very impressive. The Chesapeake Foundation, which Will heads up, has played the primary role in helping to engender that.

I must say we have gotten wonderful response at the State level, both from the Governors and the State Legislatures, which are reflected in the Commission. We are very appreciative of the interest of Pennsylvania on this problem because it sort of washes down to us. It doesn't impact in the same way there that it does in Maryland and Virginia, but they have been responsive to the challenge, and we are very grateful.

Senator BAUCUS. That's nonpoint pollution in Pennsylvania; is that correct?

Senator SARBANES. That's right. Well, a lot of it is agricultural runoff, and they've gotten the farm community there and in Maryland and Virginia to cooperate in this effort.

A real education process has taken place. First of all, we have brought together parties that used to fight, and the Federal role there has been critical in doing that. There has been a wonderful educational effort that really has people sensitized to cleaning up the bay.

We have storm drains all over the State of Maryland now that say, "Whatever goes here ends up in the Chesapeake Bay" to sensitize people in terms of what they are doing.

Senator BAUCUS. I think you are all doing a very good job.

Senator SARBANES. Thank you.

Senator CHAFEE. Mr. Chairman?

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. I'd like to join in those comments.

I recall when we started this, Senator Mathias, and then Mayor Schaefer, which is going back a few years, and, of course, Senator Sarbanes has been deeply involved with this right from the beginning and giving it a lot of leadership. I think it is terribly important to have the political leaders involved and caring, not that the private citizens aren't terribly important. It has to be everybody.

But I have noticed that, as Senator Sarbanes has pointed out, he has been deeply involved. Senator Mikulski has, Senator Warner, who sits on this committee, Senator Robb, Senator Specter, and Senator Wofford, who also sits on the committee—all of them have had a big role.

As Senator Sarbanes pointed out, whether it is glue or catalyst, the Federal role is so important, and the Federal role is in for a relatively modest amount. I don't want to get hardened, but \$21 million which went to the Chesapeake Bay last year is not a mammoth amount, but it was—I think Mr. Baker later will testify, as I'm sure Senator Sarbanes will indicate, that that's the kind of essential element. Absent that, it is really hard to get everybody to pull together.

I appreciate your taking the time to be with us.

Senator **SARBANES**. I do want to underscore the really critical role Senator Mathias played in all of this. You are absolutely right. He early on saw the problem and he began to put together the support that was necessary to focus the attention on it, and we are really trying to carry forward the banner that he left us when he left the Senate.

It has been a marvelous effort in the sense of bringing people together to deal with a problem and having them all look forward instead of fighting amongst themselves.

I am very appreciative to Senator Warner, who I see has now joined us, for his very strong support. This has really been a very bipartisan effort from the very beginning.

Senator **WARNER**. I would say the most bipartisan I've encountered in the 14 years I have been privileged to serve here. And, indeed, it was Senator Mathias that had the vision, but you and others joined in, and the governors of our respective States.

It is a far cry from the oyster wars we had at the turn of the century.

Senator **GRAHAM**. Senator Lieberman?

Senator **LIEBERMAN**. Mr. Chairman, I just want to thank Senator Sarbanes for his statement and just to stress what I think is the strength of the point he makes about the connecting that is going on here and the interstate connecting because of the greater awareness that we have that we are really talking about ecosystems here and broader watersheds.

We had a fascinating experience Sunday in Connecticut on this point when Secretary Babbitt came in and the Fish and Wildlife Foundation nationally announced that they were acquiring salmon fishing rights off Greenland as a way to assist in returning the salmon to the Connecticut River.

Here these salmon had started in Canada, go through New England down through the river, out through the sound out to the Atlantic Ocean, and then up to Greenland. We see the way, particularly through the waters, that we are all connected.

As Senator Sarbanes said, what happens in Pennsylvania affects the Chesapeake Bay, which brings me back to this point: the emphasis in the legislation that Senators Baucus and Chafee have introduced, which is reflected also in S. 815 that I have introduced, on watershed planning and rewarding those who do watershed planning with financial assistance to help make it possible is critically important, and it is a recognition of reality that Senator Sarbanes I think has quite eloquently pointed to.

Thank you.

Senator **SARBANES**. Let me make one final point.

The Susquehanna is a major tributary into the bay. The Susquehanna begins in Cooperstown, New York, and it comes out of Lake Otsego. If you go to the Baseball Hall of Fame, you make that sort of pilgrimage, right there in Cooperstown, down the street a little way—I went to look at it—is where this stream starts down then broadens out and becomes the Susquehanna and eventually flows south. It is no wider than right across here at that point.

Senator **GRAHAM**. Senator Sarbanes, thank you very much for your very helpful statement today and the leadership which you and all of the people that you have been generous enough to recog-

nize have given not only the Chesapeake Bay, but also as an example of what similar efforts can mean to other endangered water bodies across America.

Thank you.

Senator SARBANES. Thank you very much.

**OPENING STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR
FROM THE COMMONWEALTH OF VIRGINIA**

Senator WARNER. Mr. Chairman, I join in that. To show my respect for my good friend and colleague, his statement will be the one today. I will put mine in the record.

[Senator Warner's statement follows:]

**STATEMENT OF HON. JOHN W. WARNER, U.S. SENATOR FROM THE
COMMONWEALTH OF VIRGINIA**

Mr. Chairman, and other members of the Committee, I am very pleased that the Subcommittee will hear testimony today on the Chesapeake Bay program, and particularly on legislation which I am pleased to cosponsor S. 567, the Chesapeake Bay Restoration Act.

This year is the tenth anniversary of the signing of the first Chesapeake Bay Agreement—a successful, cooperative effort at watershed planning and restoration of the entire Bay area agreed to by Virginia, Maryland, Pennsylvania, the District of Columbia, the Environmental Protection Agency, and a tri-State legislative body, the Chesapeake Bay Commission.

Now is the appropriate time to assess the progress we have made over the past decade, and more importantly, to examine the daunting tasks which lie ahead.

Mr. Chairman, let me state clearly that I hope that the full text of s. 567 will be included in the Clean Water reauthorization bill when it is ready for Committee mark-up.

Let me emphasize also that a significant amount of effort has been invested in drafting the Chesapeake Bay Restoration Act. This legislation is the result of over two years work by our States, members of the Chesapeake Bay Commission, the Chesapeake Bay Foundation and Bay state legislators.

This legislation takes major steps in moving the program forward while keeping faith with the principles which have kept the jurisdictions steadfastly united in the common goal of restoring the Bay. First, the bill contains the flexibility necessary for States to respond to new and changing research information on the health of the Bay. Second, this bill continues to foster the strong and essential partnership between the Federal government and the States, and perhaps more critical, between the states themselves.

Mr. Chairman, in 1979, when I first joined our distinguished former colleague, Senator Mathias from Maryland, in this commitment to bring together significant state and federal resources to "save" the Bay, it became clear that information on the problems afflicting the Bay was sorely lacking.

Much of the effort in the early years focused on defining the Bay's problems. We have known for some time that excessive nitrogen when decomposed depletes oxygen causing "dead" areas in the Bay, that the Bay was plagued with toxic hot spots, and that the return of underwater by grasses and living resources would be key indicators in our efforts to restore the Bay.

Mr. Chairman, what I have learned from being associated with this program for over ten years is to never think we know all the answers to what it will take to keep the Chesapeake one of America's greatest treasures.

I only have to look at the Chesapeake Bay Commission's 1992 Annual Report which discusses the efforts to control nutrient loadings. It states, "While reductions in phosphorus are well underway, nitrogen levels in the Bay have remained almost unchanged since 1985, the baseline year for the 40 percent reduction. . . . In short, the nutrient we need to worry about most (nitrogen) is the one which, until now, received the least attention."

This information led the Bay states to redouble our efforts to meet the commitments made in the 1987 Chesapeake Bay Agreement to achieve a 40 percent reduction in nutrient loads by the year 2000. In 1992, the Chesapeake Executive Council amended the 1987 Agreement to focus the nutrient reduction strategy on a tributary by tributary basis.

While the Bay Program continues to evolve as we move into a new stage of making some very difficult decisions, I believe it can truly serve as a model for the management of our nations' other estuaries.

The Bay Program's cooperative structure has been successful in fostering commitments from divergent political entities and citizen groups. The Bay Program leads the nation in nonpoint source pollution control, nitrogen removal technologies, estuarine modeling efforts, and sediment and erosion control initiatives. It has pioneered beneficial uses of dredged materials and has initiated several model land use programs.

Mr. Chairman, during the August recess I will be holding a series of meetings with state officials, representatives of agriculture and industry and members of the environmental community, including the Chesapeake Bay Foundation who has joined us today, to discuss the watershed management and nonpoint provisions of S. 1114. I look forward to sharing their thoughts with you as the Committee prepares to markup this bill later this year.

Senator GRAHAM. Thank you very much.

Senator Warner, we interrupted the first panel in order to hear from Senator Sarbanes.

Senator WARNER. I understand.

Senator GRAHAM. We have a few more questions for the first panel. It is now Senator Lieberman's turn to ask questions.

Senator Warner, if you have any questions I will call on you next.

Senator WARNER. Thank you.

Senator GRAHAM. Senator Lieberman?

Senator LIEBERMAN. Thank you, Mr. Chairman.

I will try to be brief.

I wanted to thank Ms. Martin for her kind words about S. 815. We have been delighted to work with your organization in putting it together. And, responding to the chairman's broad statement, to thank anyone else who has or will say kind things about S. 815 in the course of the morning.

I, in a way, have begun my statement by what I said in response to Senator Sarbanes but, just to ask you, Ms. Martin, if you could talk a little bit about two things.

First, is the way in which very broad—we're talking here a lot about inter-relatedness, and just talked about the natural inter-relatedness of ecosystems or watersheds.

One of the things that struck me in Connecticut—it's reflected in the person of John Atkin on the next panel—is the conceptual breakthroughs, the psychological breakthroughs that have occurred in the very broad coalitions that are now forming to protect estuaries.

I wanted to ask you whether in this case we have labor, management, environmentalists, contractors all seeing the significance of cleaning up the sound. Is that happening nationally?

Ms. MARTIN. Without a doubt. It has been very exciting for me. Since I have started working American Oceans Campaign about four years ago I started working on this piece of legislation, and there was no other environmental group that I knew of really on a national level doing this.

Since in the last couple of years, I have a mailing list of now over 300 national groups, and just countless local groups that are wanting to work on this bill.

I think part of it has to do with the fact that Congress has acknowledged the role—and the very important role—that citizens

can play. Finally, they feel as if someone is really listening to them. They can participate in the management conferences and the citizen advisory committees, and they feel like they get something for their money or for their time at the end of the process because they see some progress.

The coalition effort I think has been important both with the labor and the industry and the Clean Water Jobs Coalition on the funding element of it, but also on just the program strengthening provisions that your bill also focuses on.

We have a whole new realm of industrial types of interest joining our coalition now, too, from recreational users and sporting magazines and scuba divers and those types of people to realizing that all of their business depended on healthy waterways, and particularly the estuaries.

Senator LIEBERMAN. Let me ask you one final question. I appreciate that answer. It is encouraging.

The nitty-gritty, if you will, is money. We have seen estimates of what it would take to clean up Long Island Sound which, of course, we believe—and I hope people nationally begin to believe—is an estuary of significance that really does compare to the Chesapeake Bay and Great Lakes. We have seen estimates that go from \$6 billion to \$26 billion to clean up the sources of pollution, to clean up the sound. That involves New York, Connecticut, and, to some extent, Rhode Island.

My bill, and I believe the Baucus-Chafee legislation also includes a funding for the State revolving funds to support infrastructure changes—in our case up to \$5 billion annually. How significant is that, do you think, to dealing effectively with the kinds of problems we are talking about here?

Ms. MARTIN. Being a Washington kind of inside-the-beltway lobbyist, I very often get slapped around by my friends out there in the field for saying that \$5 billion is what we are advocating for, because they say that really is a drop in the bucket compared to the needs. As you said, implementing just the sediment provisions in the Puget Sound Watershed comprehensive management plan is upward of \$20 billion.

So \$5 billion for the whole Nation is really insignificant, but when that can be leveraged with the types of means that are being worked on and developed in the local estuary programs, the money can go much farther than it appears on the surface.

I think your bill also highlights some of those things, and we want to continue to educate other estuary programs and other watershed management models on how to make the most efficient use of their funds. And, of course, to include the local people you have to include local dollars and State dollars to keep their interest involved in it. We think that's an important provision.

Senator LIEBERMAN. Thank you, Ms. Martin. And thank you, Mr. Chairman.

Senator GRAHAM. Senator Warner?

Senator WARNER. Mr. Chairman, I'm going to pass, and reserve my time for the next panel. Thank you.

Senator GRAHAM. Mr. Brinsko, I don't want you to feel as if your remarks were not heard. You are essentially laying out a new chal-

lenge, while your two colleagues were discussing the effects of our efforts to deal with issues that are currently underway.

From your statement, I infer that you feel that the current Clean Water Act does not contain sufficient flexibility in the administrator to deal with some of the unusual circumstances that are a consequence of the peculiar climate and meteorology of the arid west. Is that correct?

Mr. BRINSKO. Mr. Chairman, that is correct. Early in my presentation I made note of my former home city, Pittsburgh. I spent 50 years there. Listening to your conversations here on wet ecosystems brough back memories of when I was heavily involved for 22 years in Pittsburgh.

But coming to the west, I found a different situation. Our problems are unique. When we talk about flexibility—flexibility, unfortunately, is a two-edged sword. It all depends on the interpretation of this flexibility aspect.

Our concerns primarily are that Congress said that all water should be fishable and swimmable, and on the surface that sounds great. But if this group would join me in Tucson today, and if anybody is a golfer, we have a 60-mile lineal sand trap that runs from one county border to another. To make this fishable and swimmable is rather difficult because we just don't have the water there. It is a dry river.

Our problem is that we are faced with these standards that are inappropriate for our kinds of waterways. Even though they are listed as navigable waters, we just don't have the water in it. The only water that we have there is the effluent discharge from the wastewater system and periodic rainstorms. Effluent discharges form a riparian habitat, but aren't adequate or sufficient to maintain anything beyond that.

What we need is for Congress to establish a section in the law which recognizes the need to develop proper water quality criteria documents and water quality standards based on appropriate scientific research for our part of the country: the arid west.

What we are looking for, basically, is to level the playing field. I'm sitting here listening to what is going on in the Chesapeake Bay area, which is great. The Great Lakes area is also an important area because I came from Pennsylvania and I understand what is going on there. But to equate those standards and the standards that were developed in previous years in the wet ecosystems and move them out into the west, and using a translator to say, "okay, these are your standards," it just doesn't work.

We feel it is a very appropriate request to say, "Let's get some research. Let's get some science into the west. Let's find out what we have to protect there, and let's protect it."

However under current policies, it is a crap shoot. Some of you could say that we are looking for some leniency in standards. That is not true, because the studies could very well indicate that we have to take out more of the pollutants.

But it also may show it is not necessary to take out some of these pollutants. Ammonia is an illustration. I had a five-year—let's call a spade a spade—a five-year battle with the EPA back seven years ago. One of EPA's requirements was to take out ammonia from effluent discharges. We went through an extensive process and litiga-

tion and so forth to be able to substantiate why it was not necessary to take out ammonia.

However, if the agency—the regulatory agency—would have prevailed, I would have had to have spent approximately \$118 million of our ratepayers' funds to be able to retrofit the treatment facilities. The bottom line is that there were no net environmental benefits. The community would have to have had an increase of their rates by a 45 percent factor.

So when we start talking about the west, the issues in the west, the problems we have, the flexibility, it is very important to us.

This is why, in my presentation, I request that there be a research program to be able to address not just the problems in a specific area but the problems of the entire arid west. If you look at the map in our submit all, you will find there are 17 western States. Portions of those States have 15 inches of rainfall or less.

I'm not just talking about Tucson, Arizona, or Arizona; I am talking about the 17 western States that need the consideration, need to be able to develop proper criteria documents for our part of the country.

We need it because money is scarce. We don't have the money just to waste in an area where really the money could be utilized some place else.

Senator GRAHAM. Thank you very much, Mr. Brinsko.

Are there any other questions of Mr. Brinsko or other members of this panel?

Senator BAUCUS. I just want to say he makes a good point with respect to the aridity in the west. I think it is important to remind all of us here that west of the 100th meridian it doesn't rain. The average annual precipitation—I don't know about your State, but in the State of Montana it is about 14 inches. That's in the lowlands—not in the top of the mountains where the snow accumulates, but the average annual precipitation is about 14 or 15 inches. Back here in Washington it must be around 45 inches at least.

Mr. BRINSKO. But the eastern parts of Washington are very dry.

Senator BAUCUS. I'm talking about Washington, D.C. I would guess—

Mr. BRINSKO. I think there are about 100 inches out there right now, sir.

Senator BAUCUS. And it is the lack of precipitation which is the single most defined criteria of the west—and also because they are interior States. That explains why the population density is so low—just because it doesn't rain, there is no water, and because they are non-coastal States. I think about 50 percent of our country's population is within 50 or 75 miles of a coast. The rest is interior. If you look at the rest that is interior, it is distributed basically according to where it rains, where there is rainfall.

You make some very good points, and I think it behooves all of us to listen very seriously to what you are saying because there is a lot of truth in what you are saying.

Mr. BRINSKO. Senator, thank you.

Senator CHAFEE. I want to join in that, Mr. Chairman. I think Mr. Brinsko has brought before us something that we normally don't deal with before this committee—an area of the country where you have a river with no water in it. As Mr. Brinsko pointed

out, he formerly came from Pennsylvania where a river was a river. Most of us in this committee are familiar with those situations. We are not familiar with the situation, as he pointed out, in the Santa Cruz River where you can walk across and not even get damp.

Mr. BRINSKO. Mr. Chairman, just as one comment, when I talk about 17 western States, we are talking about approximately 378,000 square miles of land.

Senator BAUCUS. That's right. I reminded Senator Lautenberg of the different population densities. The population density in the State of New Jersey is over 1,000 people per square mile. The density in the State of Montana is about five.

Senator GRAHAM. If there are no further questions, we have been joined by Senator Wofford.

Senator Wofford, did you have any questions of this first panel.

Senator WOFFORD. Not right now, Mr. Chairman.

Senator GRAHAM. If there are no further questions, again I want to thank this panel. You have underscored the fact that, while we are dealing with a national Clean Water Act, within that act there must be sensitivity to the full range of special circumstances which you have so effectively described. That will be clear in our mind and one of our major objectives.

Thank you very much.

If panel three could please come forward, I will introduce you as you are taking your seats.

Mr. George Coling, Washington Great Lakes Representative of the Sierra Club; Mr. William Baker, who has already been lauded, is President of the Chesapeake Bay Foundation; the Honorable Jeffrey Coy, Chairman of the Chesapeake Bay Commission and a member of the Pennsylvania House of Representatives; Ms. Caren Glotfelty, Pennsylvania Department of Environmental Resources; Mr. John Atkin, Clean Water Jobs Coalition; and Mr. Paul Hansen, Director, Midwest Regional Office, Izaak Walton League of America.

Senator Wofford, do you have an opening statement for panel three?

OPENING STATEMENT OF HON. HARRIS WOFFORD, U.S. SENATOR FROM THE STATE OF PENNSYLVANIA

Senator WOFFORD. Yes, Mr. Chairman.

This year is the tenth anniversary of the signing of the Chesapeake Bay agreement. That landmark accord marked the beginning of Federal and State cooperation to improve one of our national treasures.

Much has been done during this past decade. Phosphorus levels, a leading cause of aquatic life destruction, have been reduced; nitrogen levels have stabilized; toxic releases and emissions have been dramatically reduced; many plant and animal species are making a comeback. Yet, there is lot more to be done.

Pennsylvania supplies 50 percent of the fresh water to the Chesapeake. I'm glad that Pennsylvania recently has taken the lead in stabilizing and improving the bay.

Our new Act Six creates the Nation's first comprehensive nutrient management program to reduce agricultural runoff through proper planning and practices. Cooperation will be key to implementing this new environmental strategy.

Today we have from the Pennsylvania team on this panel two witnesses here who are vital to the creation and implementation of that Act Six.

Jeff Coy—we are very happy to see you here, Jeff—was a key player in our Legislature in bringing about consensus among diverse environmental, agricultural, and business groups. We are proud that he serves as Chair of the Chesapeake Bay Commission.

Caren Glotfelty—greetings, Caren—is Deputy Secretary of the Pennsylvania Department of Environmental Resources for Water Management, too was key in creating new approaches for Chesapeake Bay protection.

I welcome them here today, and salute also the other members of the panel. I look forward to hearing all of you and to working with my colleagues like Senator Warner on this Commission and Senator Sarbanes, who has introduced legislation on behalf of several of us to improve the quality of the Chesapeake.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much, Senator.

I would apologize in advance to members of this panel. I have a note that we might be called shortly for a vote, so it is possible that there will be an interruption during the course of your opening statements.

I will call on the members of this panel in the order in which they were recognized, again asking if you could be as concise as possible. Your full statements will be part of the record.

Mr. George Coling?

**STATEMENT OF GEORGE COLING, GREAT LAKES SPECIALIST,
THE SIERRA CLUB, WASHINGTON, D.C.**

Mr. COLING. Hello. I am George Coling, the Sierra Club's Great Lakes Specialist, based here in Washington. I am testifying today on behalf of the Sierra Club, the Lake Michigan Federation, Citizens for a Better Environment, Great Lakes United, Coast Alliance, the Contaminated Sediments Work Group, and Lake Superior Alliance.

It is my pleasure today to voice strong support of these organizations for the Great Lakes Clean Water Amendments Act of 1993, that's S. 1183. We want to thank particularly Senators Metzbaum and Glenn and the other cosponsors of the bill for their continued leadership in cleaning up the Great Lakes which is, of course, the largest freshwater ecosystem in the world.

I wish to emphasize that the organizations for which I am testifying view this bill as an integral part of a comprehensive national plan for cleaning up contaminated sediments. The same organizations testified on that subject about a month ago, and we see the S. 1183 approach as complementing that testimony.

Changes in the toxics section of the Clean Water Act—and, again, we submitted testimony about a month ago on that. Could prevent toxic buildups in the Great Lakes and elsewhere.

Certainly the Baucus/Chafee Act of 1993, S. 1114, is a very promising start for clean water authorization, and we urge the subcommittee to meld the S. 1183 Great Lakes bill into the main vehicle for reauthorization.

I have a couple of comments on what I am calling in my testimony "Toxic Harbors: The Great Lakes Plague." Throughout the Great Lakes, contaminated sediments plague the use of our harbors and waterways. Water use in 42 of 43 Great Lakes Areas of Concern—these are toxic hot spots that have been identified by the International Joint Commission of Canadian and U.S. Representatives—are impaired by the buildup of toxic muck. That's 42 out of 43 in both countries.

Evidence on the ill effects of sediments such as PCBs, cadmium, dioxin, and DDT in the water is mounting, and there are severe biotic and human health effects associated with this problem. As an example, sediments account for 75 percent of the PCBs going into Lake Michigan, and they are the main source of fish contamination in that lake.

The sediments are a clear threat not only to the Great Lakes' environment, but also to the Great Lakes' economy. In June the Sierra Club released a study called, "Clean Lakes, Clean Jobs," which documents approximately 2.9 million jobs and \$76 billion of revenue per year are in jeopardy from not cleaning up contaminated sediments in the Great Lakes. This is aggregate data from tourism, fishing, and the shipping industry in the lakes.

For example, tourism is the most threatened industry, and roughly 2.7 million people in the Great Lakes make their living from tourism. There are approximately 89,000 fishing jobs, and more than \$4 billion annually in commercial and sport fishing proceeds in the economy. These are in jeopardy, again, from doing nothing. There are 44,000 shipping jobs which contribute about \$3.5 billion to the Great Lakes' economy each year. That's the scope of the problem.

We do have a success story like the Chesapeake Bay has a success story, and that's called ARCS, the Assessment and Remediation of Contaminated Sediments program, initiated by the 1987 Clean Water Act reauthorization. This program has provided key demonstration programs for cleaning up toxic mucks in five different areas—Buffalo, Ashtabula, Saginaw, Indiana Harbor, and Sheboygan Harbor.

These are so far successful bench-scale pilot projects, and what we need now is a full-scale cleanup of some of these sites and more bench-scale models. That's exactly what the Metzenbaum bill, S. 1183, calls for, and that's why these organizations support it with some specific modifications and additions which I am going to briefly run through.

Senator GRAHAM. Mr. Coling, could you please summarize? Again, your full statement will be made part of the record.

Mr. COLING. I certainly will. Yes. I've just got a couple of quick points.

There modifications include the possibility of adding more full-scale cleanup sites, shortening the time for EPA's completion of the pilot-scale projects by three years, broadening the application of the assessments to include some smaller lakes in the basin, set-

ting a statutory deadline for completion of phase two of EPA's Great Lakes initiative, and, finally, making Lake Superior a world-class pristine water body by stipulating that all of Lake Superior is an Outstanding Natural Resource Water.

Thank you.

Senator GRAHAM. Thank you very much, sir.

Mr. William Baker, President of the Chesapeake Bay Foundation.

STATEMENT OF WILLIAM BAKER, PRESIDENT, CHESAPEAKE BAY FOUNDATION, ANNAPOLIS, MARYLAND

Mr. BAKER. Thank you, Mr. Chairman, members of the committee, and a special thanks to Senator Baucus for those kind words.

I appreciate the opportunity to appear before you today. My name is Will Baker. I'm the President of the Chesapeake Bay Foundation. We have over 87,000 members from all 50 States in the Union and 14 foreign countries.

The Chesapeake Bay is, as Senator Sarbanes said, a worldwide treasure. It is also a national and even international model for the restoration of our coastal waters.

The program to restore the bay is an effort involving the combined activities of Federal, State, and local governments, as well as concerned citizens from all sectors of society.

Just 25 years ago, the Chesapeake Bay produced one-quarter of the Nation's oysters, one-half of all hard crabs—nearly 100 million pounds in a good year—and a staggering 95 percent of all the soft crabs. In addition, nine out of every ten striped bass caught from North Carolina to Maine were born in the Chesapeake.

Today, however, the bay is a far different place. For the first time ever, the Gulf States' total catch of blue crabs has exceeded the Chesapeake.

When the Chesapeake Bay agreement was put in place in 1983, detergents still contained phosphates, the damaging impacts of nitrogen were largely ignored, agricultural programs focused almost exclusively on soil erosion, and Pennsylvania wasn't even a member of the Chesapeake Bay Commission.

We now consider most of those issues routine. We no longer debate whether nitrogen is damaging, only how best to remove it; we can't understand all the fuss about the phosphate detergent ban; and Pennsylvania is a full and complete partner and has most recently taken a leadership role in nutrient runoff from agricultural lands, thanks to legislation sponsored by Representative Jeff Coy.

Our organization strongly supports the Chesapeake Bay Restoration Act of 1993 introduced by Senator Sarbanes and, as he mentioned, with the full support of the entire bay delegation. We are particularly enthusiastic about the new wetlands restoration program, and we are pleased to see the act's focus on the tributary strategies.

This legislation will take us the necessary next step toward true integrated watershed management, an approach pioneered by the Chesapeake Bay Program that is now widely recognized as the only logical way to proceed.

Despite the value of the Restoration Act for the bay, however, it is the language in the rest of the Clean Water Act that can make or break the cleanup.

The act being discussed in this committee, S. 1114, has many features that we support. For instance, it clearly embodies the concept that the most effective way to deal with pollution from toxic substances is to keep them out of the discharges in the first place—what we have been calling “pollution prevention.” It establishes stronger programs to deal with polluted runoff, including mandatory programs for certain areas. And it elevates watershed management to its appropriate position in the Clean Water Act.

The Chesapeake watershed consists of some 64,000 square miles, encompassing six States and the District of Columbia. Although it may sound a bit presumptuous, I would submit that the world is watching us here in the Chesapeake Bay region.

For example, every week our offices are contacted by people from all over the globe. In the past six months, we have hosted visitors from some 20 foreign countries, including Japan, the former Soviet Union, Peru, Brazil, Germany, the Czech Republic, Sweden, and many others.

This November, the Chesapeake Bay will be the centerpiece of the International Conference on Coastal Seas, to be held in Baltimore, Maryland.

We in the region are indeed blazing a trail for the rest of the Nation. I urge you to incorporate the Chesapeake Bay Restoration Act into the amended Clean Water Act, and when you do that, please consider designating the Chesapeake as the Nation’s estuary, for that is truly what it is—a natural resource of singular importance to the country.

Lately, when I am asked how the bay is doing I have said that the patient is stabilized, and that we are poised on the brink of real recovery. This news is encouraging, but I do not mean to minimize the challenges we face. They are, indeed, formidable.

But do we really have any other choice but to address them?

The Chesapeake Bay lies in the heart of this great Nation’s most populated mid-Atlantic region. Washington, D.C., the capital of the world’s last superpower, is both geographically and historically central to the Chesapeake. The 15 million people who live in this watershed have repeatedly and overwhelmingly demonstrated their commitment.

One last thought. We have a model Federal, State, and local partnership at work here. The cooperation is historic. We must set our sights high. We must look to restore, not just maintain, the Chesapeake, for if we here in the United States of American can’t save the Chesapeake Bay, what real hope do we have for the rest of the planet?

Thank you very much.

Senator GRAHAM. Thank you very much, Mr. Baker.

Mr. Jeffrey Coy?

STATEMENT OF HON. JEFFREY COY, PENNSYLVANIA HOUSE OF REPRESENTATIVES, CHAIRMAN, CHESAPEAKE BAY COMMISSION

Mr. Coy. Thank you, Mr. Chairman, Senator Warner, Senator Chafee, Senator Baucus, and my good friend from Pennsylvania, Senator Wofford.

I am Jeff Coy, and I am a State Representative from the Commonwealth of Pennsylvania, and I am serving this year as the Chairman of the Chesapeake Bay Commission.

The Commission is a tri-state legislative advisory commission that was created over a decade ago by the Legislatures of Maryland, Virginia, and Pennsylvania. It serves as a signatory to the 1983 and 1987 Chesapeake Bay agreements, along with the governors of the three States and the mayor of the District of Columbia.

Functioning as the legislative arm of the cleanup effort, it is the Commission's responsibility to work with both the State Legislatures and the Congress on programs to restore the Chesapeake Bay. The Commission also provides an important tri-state perspective for the restoration effort.

I am honored to be here today as its chairman representing my colleagues from Maryland and Virginia, as well as Pennsylvania, and the other members of the Commission, to support the reauthorization of the Clean Water Act, which would include provisions of the Chesapeake Bay Restoration Act, and to emphasize the important role that the Federal Government has as a partner with the States and the District of Columbia in the restoration of the bay.

First I would like to share a few comments concerning the broader picture, the critical importance of the reauthorization of the Clean Water Act.

For almost two decades, the Water Pollution Control Act has been regarded as landmark legislation aimed at improving, protecting, and restoring water quality throughout the Nation. The act has served both as a vehicle for providing financial assistance to the States in areas such as the construction and expansion of wastewater treatment facilities, and as provided by example the incentive or impetus for many of the other water quality programs which have been undertaken at the State levels.

We commend you for your foresight in pursuing the reauthorization and strengthening of this vital legislation. Virtually every element of the Clean Water Act enhances and supplements our efforts to protect and restore the Chesapeake Bay. The act's continued support for sewage treatment plants and controls on toxic pollutants will reap significant benefits, especially in the Chesapeake Bay.

I am particularly pleased to see the nonpoint source pollution control provisions of the act strengthened and reemphasized. We have found, as have other States across the Nation, that control of the runoff of other nonpoint sources is a vexing and expensive problem. I think it is fair to say that we have made real progress in the bay region, but continued emphasis at the Federal level can only help.

While I am sure the committee is aware of the problems facing the Chesapeake Bay, let me briefly review the condition as I see it.

While we have made significant progress, and certainly advances in the last ten years, it is fair to say that we continue to have a long way to go. We have made progress with reductions in nutrient phosphorus entering the bay because of a number of phosphate detergent bans.

Senator Chafee asked earlier if the State of Wisconsin had. Of course, Maryland, Virginia, and Pennsylvania all do.

Improvements of sewage treatment plants and controls on runoff from agricultural and other types of lands are also important.

Improved water quality in many areas has led to slow but steady improvements in the bay's underwater grasses. Striped bass, known in the bay as rockfish, have rebounded.

Many problems remain, however. We continue to have difficulty in controlling excess nitrogen. Although the increase has been slowed, critical habitat such wetlands are still under pressure from this development.

There are good reasons why we have come so far, and there is reason why there is also optimism, I think, for the future.

The current Chesapeake Bay agreement, signed in 1987 and amended in 1992, has provided clear, strong, specific, and comprehensive goals for the multi-jurisdictional Chesapeake Bay program. We have, under the rubric of the Chesapeake Bay program, brought together not only the States, the District, the Commission, and the EPA, but also thousands of citizens, scientists, business leaders, local governments, farmers, and others who work toward common goals.

We have been guided by state-of-the-art research and have used a computer model for the management that is arguably one of the most sophisticated in the world.

We have also not rested on our accomplishments. The participants in the bay program have not been shy about reassessing our commitments in the face of new scientific evidence.

With a watershed that spans multiple States and jurisdictions, success only comes when recognizing that regional differences may apply, and therefore the tools that need to be applied must necessarily meet the needs of the individual areas.

The recognition of the Chesapeake Bay as a resource of national significance and your financial support for this program since 1984 have provided a vital underpinning for the entire effort.

Pennsylvania is blessed—my home State—with a strong agricultural economy. However, excess nutrients produced by agricultural operations have proved to be a very major problem for water quality in the Susquehanna River and ultimately the bay.

Money for the program—some \$12 million since 1987—supplemented—I want you to hear this—supplemented by \$17 million of State tax money in Virginia, Maryland, and Pennsylvania has given us the ability to grant farmers help to install best management practices to build manure storage facilities to help control nutrient runoff.

Earlier this year, the Pennsylvania Legislature, with the support of environmental and agricultural interests, adopted landmark agricultural nutrient management legislation which I introduced on behalf of the Pennsylvania delegation to the Chesapeake Bay Commission. Senator Wofford referred to it earlier, and I firmly believe

that this is part of the success, that this legislation came about from the acceptance of farming practices that were already funded in part by the bay program.

In closing, I cannot only say that I emphasize too strongly the importance of the Chesapeake Bay as the community watches your efforts here, but I believe that you have before you an opportunity to signal to the citizens of the bay region and to the Nation at large your continued commitment to the protection of this Nation's most productive estuary.

The Chesapeake Bay restoration effort is a state-of-the-art experiment in environmental protection which deserves and demands your continued support.

To go a little further with Will Baker's medical analogy, I like to say that the wound has been identified, the tourniquet applied, bleeding stopped, but restoration of health remains quite essential and, I think, equally important.

Thank you.

Senator GRAHAM. Thank you very much, Mr. Coy. And congratulations on the leadership that you have provided.

Mr. COY. Thank you, Senator.

Ms. Caren Glotfelty with the Pennsylvania Department of Environmental Resources?

STATEMENT OF CAREN GLOTFELTY, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Ms. GLOTFELTY. Thank you Mr. Chairman and members of the committee.

As Deputy Secretary for Water Management in the Pennsylvania Department of Environmental Resources, I am responsible for all water quality and water quantity programs in Pennsylvania, including the Commonwealth's participation in the Chesapeake Bay program.

I appreciate the opportunity to speak to you today on the Clean Water Act reauthorization, and specifically I'd like to touch on some of the lessons that we have learned from our involvement in the Chesapeake Bay program that should be applied elsewhere, and provisions that should be included in the Clean Water Act to ensure the continued success of the Chesapeake Bay program and watershed planning efforts elsewhere.

Although the area in Pennsylvania drained by the Chesapeake Bay occupies only about one-third of the Commonwealth's total land, the Chesapeake Bay program has taken on an importance in Pennsylvania, as it has in the entire country, beyond the geography it directly affects.

In Pennsylvania it has served as a catalyst for many important water quality initiatives that we have taken at the State level. Most recently, as has been referred to before, we have developed landmark agricultural nutrient management legislation under the leadership of Representative Coy.

Initially in Pennsylvania we relied on a voluntary approach to agricultural nutrient management to reduce the phosphorus and nitrogen entering the Susquehanna River and the bay from farms in Pennsylvania. Our Chesapeake Bay program in Pennsylvania

used education, technical outreach, and financial assistance to persuade farmers that nutrient management is not only environmentally responsible, but can be profitable, as well.

Our partnership with agriculture has led this year to the passage of Act Six, which now requires the preparation and implementation of nutrient management plans by high-density livestock farms. This new law was the result of the major farm organizations in Pennsylvania recognizing that nutrient management was essential to the future of agriculture in the commonwealth, and that a voluntary program alone was not sufficient.

Pennsylvania's nutrient management program, while mandatory, is not a traditional regulatory program. It requires the preparation of a plan which takes into account the farmer's crop needs, soil nutrient content, available manure, and farming practices. The site-specific nature of nutrient management planning allows the farmer to integrate appropriate management practices into normal farming operations.

The program will be administered through our country conservation districts, who have been traditional allies to farmers.

I believe that Pennsylvania's example could and should spawn a whole new generation of legislative approaches that rely less on command and control and more on shared goals, education, cooperation, and technical assistance.

The Chesapeake Bay program has shown us that it is important to set tangible, measurable goals on a watershed basis. The notion that the bay could be restored to the water quality of an earlier time through specific numerical reductions in nutrient loadings has had a tremendous effect in capturing and holding the public's attention.

More recently, the program has been able to link water quality restoration to the return of specific amounts of bay grasses and is moving toward the ability to scientifically link water quality improvement to the return of other living resources.

The power of such tangible goals is such that even in Pennsylvania, with no bay shoreline at all, the public has retained its interest in and strengthened its commitment to Chesapeake Bay restoration for more than ten years.

The success of the Chesapeake Bay program is a strong demonstration that integrated watershed planning and management is the direction in which we should be going in all geographic areas. Only through concerted action by all jurisdictions and in all media—air, water, and land—affecting Chesapeake Bay will we be able to make this progress necessary to restore living resources to the bay.

I would like to stress two important principles from the perspective of the States and other jurisdictions involved in the bay program that need to be respected for continued success. These are flexibility and perseverance.

Now, I understand that you have already heard a lot in other hearings about the importance of flexibility. Let me just say that perhaps the most critical factor in the success of the bay program to date has been the flexibility afforded the jurisdictions who are responsible for implementing the program in targeting their financial and other resources to meet the broad bay-wide goals.

Although we are all part of a single watershed, Maryland, Virginia, Pennsylvania, and the District of Columbia are all very different in terms of the impacts we have on the bay, the resources we have available to solve bay problems, and the other priorities we must balance with the needs of Chesapeake Bay.

Perseverance is also critical. We must be able to stick to the course we have set long enough to see success. With the first Chesapeake Bay agreement in 1983, nutrients were identified as the culprit causing the bay's decline in living resources. In 1987, although other environmental goals were set, as well, there was a strong and specific emphasis on nutrient reductions.

Because we have been somewhat single-minded until now, the jurisdictions have largely targeted their Chesapeake Bay resources toward actions necessary to reduce nutrients. With the 1992 agreement, the jurisdictions enlarged their perspective to include the tributaries, but the emphasis has remained on nutrients.

We have made progress. The bay is getting cleaner slowly; however, it is clear that achieving the necessary nutrient load reductions will take many years and billions of dollars.

For example, preliminary cost estimates for the Potomac River, a major tributary to the bay, indicate that it may take \$155 million to \$244 million per year for an indefinite period to remove the necessary amounts of phosphorus and nitrogen from point and non-point source discharges to achieve and maintain the 40 percent bay-wide load reduction goal.

We need to be able to count on sufficient funding to accomplish this goal and cannot afford to have the necessary financial resources or public attention diverted from nutrients until these reductions are accomplished.

In closing, I want to compliment your efforts to date on behalf of the Chesapeake Bay and to express my appreciation on behalf of all Pennsylvania citizens. I look forward to your continued support, and thank you for the opportunity to share my views with you today.

Senator GRAHAM. Thank you very much, Ms. Glotfelty.

We have just had a vote called. Senator Baucus is going to stay and continue the hearing and I will vote and return so we will have as short an interruption of the continuation of this panel as possible.

Next is Mr. John Atkin of the Clean Water Jobs Coalition.

STATEMENT OF JOHN ATKIN, CLEAN WATER JOBS COALITION, NORWALK, CONNECTICUT

Mr. ATKIN. Thank you, Mr. Chairman. And I thank the committee for the opportunity to testify here today.

My name is John Atkin, and I am speaking on behalf of the Clean Water Jobs Coalition, which originated in the Long Island Sound watershed area.

I will share my experiences as a former member of the Connecticut House of Representatives and State Senate for ten years, as founder and Chair of the Long Island Sound Committee, as one of the founding members of the Clean Water Jobs Coalition, and as a person actively involved in Long Island Sound activities through

the Soundkeeper Fund, National Audubon Society, and other organizations.

I grew up in Norwalk, Connecticut—one of 98 cities and towns, including the New York City boroughs of Queens and the Bronx, that surround Long Island Sound. Today, as when I was a youngster, I swim and boat in the sound, and I have taught aboard a research vessel on the sound about the sound to youngsters and adults, alike, about the 450 species of marine life that inhabit the sound.

I have told my students that the sound has 577 miles of shoreline. It is 110 miles long and 21 miles wide at its widest point.

Mr. Baucus indicated earlier that 50 percent of the population was within 50 or so miles of the coast. I can tell you 10 percent of the population of this country lives within 50 miles of Long Island Sound.

That startling statistic is precisely why this estuary is stressed. Over 1 billion gallons of inadequately treated sewage pours from sewage from 44 different sewage treatment plants into the sound every day—almost 400 billion gallons a year.

Land development over the last 200 years has filled in nearly 75 percent of the coastal wetlands that acted as a natural buffer and filter for the runoff into the sound.

Additionally, the construction of industry, roads, and parking lots near the sound speed up the process of toxins, oil, salt, trash, and animal waste finding its way into the body of water.

The sound is bordered by two States and is serviced by two regions of the EPA—Connecticut in region one, and New York in region two.

Senator Lieberman's Long Island Sound Improvement Act of 1990 was an important step in recognizing the sound as a nationally significant estuary with its own EPA office after models set forth for the Chesapeake Bay and the Great Lakes.

This, along with the ongoing work of the Long Island Sound study under the NEP, the creation of the Bi-state Long Island Sound Committee, and the citizens' alliances and coalitions that have formed are further evidence of the sound being a priority water body for the Nation.

I stood on the shores of the sound on Calf Pasture Beach in Norwalk nearly six years ago and called on my then colleagues from the State of Connecticut and New York to join together on a formal and regular basis to examine what each State was doing in handling the problems of the sound. This effort was designed to complement the programs initiated under the national estuary program.

Identical legislation was introduced in both States by the former bi-state committee, and after passage and the signatures of both governors the first meeting was held. Governor William O'Neill of Connecticut attended and enthusiastically called for renewed action and cooperation between the States. And Governor Mario Cuomo of New York, through a spokesperson, did the same.

Since that day, as Dawn Martin earlier stated, the States' environmental agencies and legislative representatives have been working closer together than ever to further ensure that the issues deal-

ing with the sound are addressed equitably on both sides of the State line.

Today, public concern for the sound continues to be high, and major policy decisions are being discussed. In addition to the reauthorization of the Clean Water Act, the draft of the CCMP for the sound under the NEP has been completed, and the public has had an opportunity—many opportunities—to comment under this on the CCMP.

Although many of us, frankly, felt the plan fell short of expectations and are somewhat disappointed with the lack of technical discussion, we still realize that without it and without the NEP there would be little cooperation among the States.

For example, the no net increase of nitrogen plan that was adopted by Connecticut and New York probably never would have occurred without that plan.

We do need the leadership of this committee to ensure that the Federal Government remains an active player and a financial supporter in the effort to restore our sound. It is essential that the Federal Government remain a partner in assisting States and municipalities in upgrading sewage treatment facilities in the sound's watershed.

The continuation of funds in the Long Island Sound estuary to further assist in the establishment of the SRF funds must continue. Many Connecticut cities have been hit hard by the recession and massive deficits. In fact, a couple of years ago the city of Bridgeport actually filed for bankruptcy to demonstrate the severity of the situation in their city.

Finally, as my time runs out I'd like to talk a little bit about Senator Lieberman's bill, S. 815, the Water Pollution Control and Estuary Restoration Act, cosponsored by Senators Moynihan, Dodd, and D'Amato. In the House, Representatives DeLauro and Lowey have introduced companion legislation with over 60 cosponsors.

I have attached for the record a list of over 100 organizations from the northeastern United States in support of S. 815, including environmental groups, union, and building trade organizations.

Again, we need strong Federal support for the NEP for implementation of the CCMP, for continued coordination between State and Federal agencies, and for the funding levels of S. 815 to bring the SRF program to a level of \$5 billion annually with special set-asides for critical, nationally recognized estuaries such as the sound.

In conclusion, the sound represents an ecological system with some of the greatest urban population pressures in the Nation. A clean sound makes environmental and economic sense because it can pave the way to solving some of the complex problems facing estuaries nationwide.

We in the coalition are proud of the Long Island Sound region's leadership in bringing together jobs and the environment nationally. We can only hope that S. 815 will become part of the committee's Clean Water Act reauthorization proposal.

I thank the committee for the opportunity to testify today, and would be pleased to work with the committee and its staff if I can be of any assistance.

Thank you.

Senator BAUCUS. Thank you very much, Mr. Atkin.

Mr. Hansen? I believe you are the remaining witness. We may have to intervene if Senator Graham does not return in time, but why don't you proceed at this point?

STATEMENT OF PAUL HANSEN, DIRECTOR, MIDWEST REGIONAL OFFICE, IZAAK WALTON LEAGUE OF AMERICA, MINNEAPOLIS, MINNESOTA

Mr. HANSEN. Thank you, Mr. Chairman and members of the committee.

I am Paul W. Hansen, Director of the Midwest Office of the Izaak Walton League of America.

As you may know, the League has been deeply involved in Mississippi River conservation issues since 1924 when League-sponsored legislation establishing the Upper Mississippi National Wildlife and Fish Refuge was passed by Congress.

The pen that President Coolidge used almost 70 years ago to sign that legislation is displayed in my office today.

This year the Izaak Walton League's national convention was held in Davenport, Iowa, in mid-July, in spite of the floods.

I am here today to tell you that the Mississippi River desperately needs the special designation for watershed planning that Congress has provided to the Great Lakes and to our great estuaries. We have heard eloquent testimony today on the effectiveness of this approach, and we need it on the upper Mississippi.

The Mississippi River is the dominant watershed of the North American continent. It is the second-largest drainage basin in the world. Congress has designated the upper Mississippi in 1986 as both a nationally significant ecosystem and a nationally significant transportation system.

The Mississippi River is also considered one of North America's greatest environmental resources. It is home to almost 241 species of fish, 270 species of birds, and the narrow strip of green and blue through the Nation's agricultural heartland is a major flyway for over 40 percent of North America's waterfowl and wading birds.

The Upper Mississippi National Fish and Wildlife Refuge gets over 3.5 million visitors per year—more than Yellowstone National Park—during normal years.

As Senator Mitchell mentioned earlier, nutrient enrichment and sedimentation from contaminated runoff are degrading the Mississippi River ecosystem and are contributing substantially to development of a large oxygen-depleted anoxic area known as "The Dead Zone" in the Gulf of Mexico.

Senator BAUCUS. Mr. Hansen, I'm going to have to ask the committee to recess at this point. There is a vote going on, and I'm the last one here, and I've got to go vote.

Mr. HANSEN. Certainly. I understand.

Senator BAUCUS. Senator Graham will be back very shortly.

Mr. HANSEN. Thank you.

Senator BAUCUS. Thank you very much.

[Recess.]

Senator GRAHAM. I call the committee back to order.

Mr. Hansen, I understand you were in the midst of your statement when Senator Baucus had to leave. We have been joined by several Members of the House of Representatives who are in the same situation we are, and that is facing a series of votes.

If you would be kind enough to let us hear from those Members of the House, then we will return to panel three and hear the balance of your statement and questions that might be asked.

Mr. HANSEN. Certainly.

Senator GRAHAM. I appreciate your indulgence.

Panel four is Members of the House, Eric Fingerhut of Ohio, and Marcy Kaptur, also of Ohio. I know that Ms. Kaptur is here because I saw her in the elevator. Is Congressman Fingerhut here?

Senator FINGERHUT. Yes, Mr. Chairman.

Senator GRAHAM. If you could, please come forward. Maybe Mr. Coy or Mr. Hansen could share your chair momentarily.

Senator METZENBAUM. Mr. Chairman, I'd like to make a brief statement, if possible.

Senator GRAHAM. Senator Metzenbaum also has a statement relative to the subject of panel four of the Great Lakes.

Senator WARNER. What happened to the Chesapeake Bay panel? I went to vote, and they've gone?

Senator GRAHAM. No. They are still here. We are going to hear from Members of the House of Representatives who are here to testify, following our rule of recognizing Members of the Congress as they arrive.

Senator WARNER. Mr. Chairman, could you advise the members of your subcommittee what time we would likely have the opportunity to pose questions to panel three?

Senator GRAHAM. I would say that, assuming that Senator Metzenbaum, who has a statement, and Ms. Kaptur and Congressman Fingerhut use approximately five minutes apiece, in 15 minutes we'll be back to that panel.

Senator WARNER. Thank you very much.

Senator GRAHAM. Senator Metzenbaum?

OPENING STATEMENT OF HON. HOWARD M. METZENBAUM, U.S. SENATOR FROM THE STATE OF OHIO

Senator METZENBAUM. Mr. Chairman, thank you very much. I have a brief statement.

I am not a member of this subcommittee, but I wanted to attend today's Clean Water Act reauthorization hearing on regional issues because of my involvement in clean water issues as they relate to the Great Lakes.

Before I begin, I'd like to express my appreciation to the chairman of this subcommittee and the ranking member for all the work they have done in holding this series of hearings on the Clean Water Act reauthorization.

There is little doubt about it: tremendous progress has been made in cleaning up our rivers, lakes, streams, and ocean coasts, but more remains to be done.

Untreated sewage, industrial discharges of toxic pollutants, and pollution from urban and agricultural runoff still threatens our waterways.

The Clean Water Act reauthorization bill that Senators Baucus and Chafee introduced not too long ago addresses these water pollution issues on a national basis, but there are regional bodies of water that have unique problems and deserve special attention. One of them is the Great Lakes.

What a marvelous asset to this Nation the Great Lakes are. It is simply impossible to overstate the importance of the five Great Lakes. Their value is a source of freshwater, food, transportation, and recreation. They are the highway of shipping and commerce in the Nation's most industrialized region, stretching from the Iron Mountains of Minnesota through the great manufacturing cities of Detroit and Chicago and Cleveland and Buffalo. They are an unparalleled fishing and recreational resource. They are the primary source of drinking water for millions of Americans. They constitute—and this is such a significant fact—constitute over 95 percent of this Nation's fresh surface water.

Yet, the shorelines, the tributaries, the open lakes, themselves, are in danger. They are endangered by industrial pollution, agricultural runoff, municipal sewage—even the oil and grease running off city streets.

I introduced S. 1183, the Great Lakes Clean Water Amendments of 1993, in an effort to enhance the water quality of this precious national resource.

My legislation, which is an expanded version of something I offered last year to the water resources bill, is meant to fit within the broader Clean Water Act reauthorization bill.

I would ask that a longer version of my statement appear in today's hearing record.

Senator GRAHAM. Without objection.

Senator METZENBAUM. Let me close by summarizing some points from my bill.

The bill reflects a broad-based effort to address contaminated sediment issues and other problems confronting the Great Lakes. Under my bill we will test new sediment cleanup technologies, establish more environmentally sensitive requirements for dredge sediment disposal, provide incentives for industry for pollution prevention and provide a mechanism for enforcement penalties to be reinvested into Great Lakes cleanup programs.

Congresswoman Marcy Kaptur and Congressman Eric Fingerhut, two of whom are our pride and joy, will testify about comparable legislation in the House. I think we are well on our way toward enacting solid, comprehensive legislation which will be of benefit to the Great Lakes and the entire country.

I look forward to working with members of the Great Lakes communities, and members of the subcommittee and the full committee on my legislative initiative, as well as on the broader Clean Water Act reauthorization.

I am particularly pleased that Congresswoman Kaptur and Congressman Fingerhut are both with us this morning.

[Senator Metzenbaum's prepared statement follows:]

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THE STATE OF OHIO

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Untreated sewage, industrial discharges of toxic pollutants, and pollution from urban and agricultural run-off still threaten our waterways.

The Clean Water Reauthorization bill, which Senators Baucus and Chafee introduced not too long ago, addresses these water pollution issues on a national basis. But there are regional waterbodies within the country that have unique problems and deserve special attention.

One of them is the Great Lakes.

It is simply impossible to overstate the importance of the five Great Lakes—their value as a source of fresh water, food, transportation, and recreation.

They are the Highway of Shipping and Commerce in the Nation's most industrialized region, stretching from the iron mountains of Minnesota through the great manufacturing cities of Detroit, Chicago, Cleveland, and Buffalo.

They are an unparalleled fishing and recreational resource.

They are the primary source of drinking water for millions of Americans. And they constitute 95 percent of this Nation's fresh surface water.

Yet the shorelines, the tributaries, the open lakes themselves are in danger. They are endangered by industrial pollution, agricultural runoff, municipal sewage, even the oil and grease running off city streets.

I introduced S. 1183, "The great Lakes Clean Water Amendments of 1993," in an effort to enhance the water quality of this precious national resource. My legislation, which is an expanded version of something I offered last year to the Water Resources Bill, is meant to fit within the broader Clean Water Act Reauthorization Bill.

Sensors Glenn, Riegle, Levin, Kohl, Feingold, Simon, and Moseley-Braun are co-sponsors. Congresswoman Kaptur, D-Toledo, Ohio, and Congressman Fingerhut, D-Mayfield Heights, Ohio, will be here today to testify about comparable legislation being offered in the House.

Specifically, my bill seeks to better manage the disposal of polluted lake sediments that must be dredged regularly from the rivers and harbors in order to maintain shipping. Sometimes these sediments are so polluted they must be confined in disposal facilities. Sediments that are only mildly polluted are simply dumped in the lakes.

The threat to human health presented by polluted sediments—whether they are confined or dumped—is very real. Food chains poisoning, which begins with the fish, winds up on the dinner table. According to a national research council report, neuro-muscular impairment, small birth weight, and smaller head size in infants was pronounced in mothers who ate toxic Laden Lake Michigan fish only twice a month.

My legislation will require the corps of engineers to pay more attention to environmental concerns when deciding where to dump dredged spoils in the lakes and give EPA a bigger role in this disposal process. The bill will also require that all of the existing—and any new—confined polluted sediment facilities have management plans that include provisions for reclaiming the land and monitoring it after the facility has closed.

The Bill also addresses the issue of sediment accumulation. It requires the corps of engineers to measure sediment loadings into the major tributaries of the lakes and sets up a grant program to promote projects which can reduced sediment run-off in the first place.

In addition, the bill will facilitate the clean-up and removal of contaminated sediments by allowing five full-scale technology cleanup demonstration at toxic hot spots identified within the Great Lakes.

But the Legislation moves beyond the sediments problem. It provides incentives to Great Lakes industries to install new pollution prevention technologies. It also gives towns and cities technical help in reducing the run-off from streets and parking lots that pollute the lakes.

There is language in the bill to coordinate research efforts now carried out by several Government agencies and to set deadlines for EPA action on developing

Lakewide Management plans to set out the long-term strategy for restoring, protecting, and maintaining high water quality in each of the Great Lakes.

Finally, the bill creates a revolving fund into which penalties from Great Lakes specific water quality violations will be deposited, thus creating a source of funding for Great Lakes water quality programs.

This is a solid and comprehensive proposal. It has cleanup, it has management and it looks to the future.

Mr. chairman, I look forward to working with members of the Great Lakes community, members of the subcommittee and the full committee on my legislative initiative as well as on the broader Clean Water Reauthorization.

Senator GRAHAM. Congresswoman Kaptur?

STATEMENT OF HON. MARCY KAPTUR, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Ms. KAPTUR. Thank you very much, Mr. Chairman, our esteemed Senator Metzenbaum, Senator Warner, and members of the committee. It is a real pleasure to appear before you this morning, and I would like to submit my statement in entirety for the record and not burden you with reading all of it, but I would like to summarize.

Senator GRAHAM. That's very kind. Yours and all the statements will be submitted in full for the record.

Ms. KAPTUR. I thank you. It is also a pleasure to be here with my colleague, Congressman Fingerhut, who represents the northeastern portion of Ohio. I am on the other side of the State, the northwestern part. The bluffs rise in the northern part of Ohio from our region where there is about a 2 percent slope all the way up to the Cleveland area, so the topography is rather interesting.

I wanted to come especially this morning as Chair of the Northeast Midwest Coalition on the House side to make sure that the Great Lakes Region was on the radar screen of members of this subcommittee as it conducts its important work, as well as the full committee.

I wanted to come in full support of all of the work that Senator Metzenbaum, as well as Senator Glenn, has done on the Great Lakes Clean Water Act Amendments. The Senator has referenced that Act this morning.

Twenty years ago, for those of us who can remember back that far, Lake Erie literally was a dead lake. There is a rather interesting phenomenon that occurs in the Great Lakes Region. Our lakes, as a whole, flush out very slowly. So you've got Lake Superior that takes about 200 years to flush out, Lake Michigan 100 years, and Lake Erie, because of its shallowness, but three years.

That creates, with our very low slope, a real problem that is particularly addressed by the Senator's bill in terms of pollution prevention as well as this business of reducing contaminated sediments into the lake.

I wanted to talk a little bit about some of the specific problems we have had in our area as a result of our topography.

Agricultural runoff is our major problem right now—the non-point source pollution. In fact, if you look at Ohio, my corner costs the Army Corps of Engineers \$7 million a year just to keep our fishing channels open, largely because of the shallowness.

Unfortunately—and it is really sad to say this, but we haven't found the trick to get the Environmental Protection Agency and

the Army Corps of Engineers to work together cooperatively. I think the UAW and Chrysler, Ford, and General Motors have a lot to teach our Federal agencies about working together toward a common end.

We have a real problem, and we would ask your specific attention to this in the legislation that you draft.

We had a situation where our port was practically closed down because EPA did not want the Corps of Engineers to open lake dump the substantial sediments that have deposited in our shipping channels, and the bureaucracy of this has held up resolution of the problem for such a very long time.

This can't continue to go on in the Great Lakes area, and I dare say other sections of the country.

In addition to that, in the area of contaminated sediments, I know that the Senator has provided in his bill demonstration areas for sediment reduction. We need to find a way to deal with the massive amount of materials—literally trainloads full—every year that are currently being open lake dumped in lakes like Lake Erie.

Our disposal facilities are full, and there has to be a better way. The Army Corps down at the Mississippi facilities has some suggested ways of reusing some of the sediment, getting rid of the toxics in it, and providing a lot of that for fill or, in fact, for fertilizer and other uses.

We would encourage you to, support their efforts to stop these contaminated sediments from going into the lakes in the first place through working with stream bank buffers, windbreaks, cover crops, wetlands, reducing chemicals and agricultural pesticides and fertilizers, etc. Perhaps selecting a few of these areas so we can work together and look toward the 21st century.

I also wanted to bring another area to your attention which I know Senator Metzenbaum cares very deeply about, and my testimony is very detailed on this. Even though this concerns the Clean Water Act, the relationship of what you are doing to border clean-up—not just U.S.-Canadian border, but U.S.-Mexico border. My testimony has significant information in it about the requests we are now getting—and I serve on the Appropriations Committee over on the House side for EPA—from this Administration and several past Administrations to provide special treatment for installation of clean water, as well as sewage facilities, down at the U.S.-Mexico border.

We are not saying that isn't an important region to be concerned about. However, the many of the proposals at the southern border are for grants, as opposed to matching requirements which are required of states in our area of the country. We ask for a level playing field.

Whatever is done at the U.S.-Mexico border, we ought to have the same treatment at the U.S.-Canadian border. That is not now the case. We have 43 contaminated toxic areas in the Great Lakes. We haven't taken care of them. Some of the very same companies that caused the problem up in our region are now moving south of the border and have already polluted down there. There is no reason that we should let those folks off the hook.

So we are asking for a level playing field, a national policy that treats all regions of the country fairly.

My testimony is very detailed in that regard.

Senator Metzenbaum, I know you will be our conscience and watchdog on that issue here. My testimony includes numbers from EPA, USDA, Interior, HHS, and State on where that money is being requested and where it is going. Our taxpayers have a right to be treated fairly in our region.

I thank you very much for your attention.

Senator GRAHAM. Thank you, Madam Congresswoman.

Let me just insert a modification of the response I gave a few moments ago to the Senator from Virginia.

One, we have just started another vote, so there will be an interrupt for that. We also have two other Members of the House of Representatives who have joined us to speak on panel five relative to the Gulf of Mexico, so it would be my intention to hear from Congressman Fingerhut, then move to the other two Members of Congress who are here, hopefully hearing all of those before we must take a temporary recess for purposes of a vote.

Congressman de la Garza?

Mr. DE LA GARZA. Would you respectfully do me the courtesy of submitting my statement for the record and not appearing in person?

Senator GRAHAM. Congressman, we appreciate that. We regret that we cannot have a chance to hear from you directly, but we will certainly receive your statement and give it full attention. (See p. 993.)

Senator WARNER. I join the chairman in that, and must say with some disappointment because we all have a very high admiration of your lengthy experience in this field.

Mr. DE LA GARZA. Thank you very much, Senator. There will be other times. I appreciate it.

Senator GRAHAM. Thank you very much.

Senator GRAHAM. Mr. Fingerhut?

STATEMENT OF HON. ERIC FINGERHUT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. FINGERHUT. Thank you, Mr. Chairman.

As the person who has served in Congress for the briefest time of anyone in the room, I will make my statements the briefest.

It is truly a pleasure to appear before this subcommittee and Mr. Chairman and Senator Warner, and my extraordinary personal privilege to be before Senator Metzenbaum, who not only is one of my heroes, but is one of my constituents, and therefore I must mind my Ps and Qs. I assure you that he frequently calls to complain to his Congressman about various things happening on the House side.

Senator METZENBAUM. The record should reflect that the Representative from Ohio was a member of this committee and understands very thoroughly the work of this committee and made many valuable contributions during his service. We miss him.

Mr. FINGERHUT. Thank you very much, Senator.

Mr. Chairman, Congresswoman Kaptur, who is really the leader of our Northeast Midwest Caucus on this issue, has spoken eloquently about it.

I'd like to give maybe just one comment as a new Member who represents a significant part of the short of Lake Erie, and that is that we live in a time when the skepticism about the work of government and the success or failure rate of government programs is probably at a record high.

The history of Government involvement, and particularly the Clean Water Act, with respect to the Great Lakes is one of extraordinary success. We took an area—really you took, Senators, through your work on this area—one of the greatest natural resources that exists anywhere in the world and that had been, through the work of man, polluted almost beyond recognition, and you have brought it back to life through the work of the Clean Water Act.

The Great Lakes in many ways—I saw the list of all the panels that will be speaking—was in many ways the forerunner of all the work that happened in the other natural resources of our country. We were a regional approach to cooperation. In many ways we were an environmental laboratory for some of the approaches that this Congress has enacted.

I would just like to point out that not only have we seen environmental benefits from this, but we have seen economic benefits. We have a \$4.5 billion annual sport fishing industry now across the Great Lakes basin. We have \$8.5 billion annual recreational economy just in the Lake Erie portion of the Great Lakes.

And in my district, alone, we estimate that if we continue to work toward the goals that Congresswoman Kaptur has articulated, particularly with respect to cleaning up the sediments in the rivers to opening up the rivers that flow to the lake, that we have \$60 million in economic development on hold right now just in the Ashtabula River area, which is in the far northeast section of my district, that we would unlock if we can make significant progress to unlock the difficulties that have existed around the issue of cleaning up the sediments in the rivers and to continue to upgrade the quality of the Lake Erie basin.

I would like to point out that I have introduced two portions of the Clean Water Act Amendments as separate legislation in the House. Congresswoman Kaptur has introduced other portions of those amendments as separate legislation. We will be together presenting them to the Public Works Committee in the House, and we are pushing on our side to keep these issues moving forward.

The bills that I have personally been working on involve taking the sediment research program, which Congresswoman Kaptur already referenced, beyond the experimental stage to the developmental stage, which is necessary, and to also coordinate all the work of our environmental agencies.

I have to underscore Congresswoman Kaptur's comments about the coordination between the EPA and the Army Corps of Engineers and the variety of other agencies that are involved in this project.

I am pleased to note that the new administrator of the EPA was out in Cleveland a couple of weekends ago. We went out with her on the lake to test water quality. She appears to be seeking to be very responsive to this area, and we encourage that and we compli-

ment them and thank them, but it is critical that the government agencies work together.

So thank you again for your interest in this issue, Senator Metz-enbaum. Thank you for the honor of being invited to testify.

Senator GRAHAM. Thank you very much, Mr. Congressman.

I would like to ask if Congressman Callahan, who is also here, could please come forward. I'd like to receive his statement before we have to leave for this next vote.

Senator Metz-enbaum?

Senator METZENBAUM. Yes. Could I just ask unanimous consent that the statement from Senator Glenn be included in the record at an appropriate place?

Senator GRAHAM. Without objection. (See p. 995.)

Thank you very much.

Congressman Callahan?

STATEMENT OF HON. SONNY CALLAHAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF ALABAMA

Mr. CALLAHAN. Thank you, Mr. Chairman, first for having this hearing and giving us the opportunity to testify.

Let me first say that those of us who are interested in the Gulf of Mexico program share enthusiastically the aims and the goals of Senator Warner with respect to the Chesapeake Bay, and with Senator Metz-enbaum with respect to the Great Lakes.

Our legislation tries to put us on a partial parity with these two great water bodies by giving recognition to some of the problems we have in the Gulf of Mexico.

The Gulf of Mexico is seven times larger, I think, than the Great Lakes. I think it is probably 90 times larger than the Chesapeake Bay. We in the past have not, we don't think, received adequate attention from either the EPA or the Congress with respect to some of the solutions that are available for the problems that face us in the Gulf of Mexico.

So our Gulf of Mexico bill takes a step in the right direction. It lets us cooperate with you to continue the efforts to improve the Chesapeake Bay and the Great Lakes, but at the same time it puts us on a partial parity saying we have a large body of water and the Gulf of Mexico is crucial to our local economy, it is crucial to the international and national economy, and it is crucial to the environment to have solutions to problems rather than just to have the police force of the EPA and Congress mandating as to what the problems are.

So that's the purpose of our legislation, which we ask that you incorporate in your Clean Water Act, and that is the purpose of our establishment of the new Gulf of Mexico Council.

With that, Mr. Chairman, I want to submit my official statement for the record, and also take the opportunity to request permission to submit for the record the statement of Congressman Greg Laughlin of Texas, who is the chief sponsor of the Gulf of Mexico bill.

Mr. Chairman, we know that you especially share with us some of the concerns for our beautiful Gulf of Mexico, and we hope that we can get the cooperation of those Senators who represent areas

such as the Chesapeake Bay and those who represent areas such as the Great Lakes to assist us in our effort to do just what they have already started doing in those bodies.

I thank you, Mr. Chairman.

Senator GRAHAM. Congressman Callahan, thank you very much. We will be pleased to receive your statement, as well as the statement of Congressman Laughlin. (See p. 996.) I know how hard you have worked.

Senator WARNER. Thank you, also, Congressman, very much. Thank you.

Senator GRAHAM. Also, we are joined by Senator Gramm.

As you know, we have a vote underway, if you would please take a seat.

Senator GRAMM. I'll be brief.

STATEMENT OF HON. PHIL GRAMM, U.S. SENATOR FROM THE STATE OF TEXAS

Senator GRAMM. Mr. Chairman, thank you for having this hearing. We want America to recognize that the Gulf of Mexico is America's sea.

We want to bring the level of our research and our commitment to a sound environment there to the level of the Chesapeake Bay and the Great Lakes. We are proud of your leadership. We want to work with you. We have a strong bipartisan base of support, and we thank you for your leadership.

Senator GRAHAM. Thank you very much, Senator Gramm.

If you have any further statement, it will be incorporated fully in the record.

We have five minutes remaining on the vote that is currently underway, so we will recess and reconvene. I see Senator Bingaman is here.

Senator, I apologize, but we will receive your statement as soon as we can return from this vote.

Senator DURENBERGER. I voted. Do you want me to take it?

Senator GRAHAM. I'm sorry. Senator Durenberger, who has voted—Senator, if you would continue the hearing, we have been receiving testimonies from Members of Congress as they arrive. We have heard from all Members of Congress who are here, to my knowledge, other than Senator Bingaman, who is here.

If you would hear Senator Bingaman's statement, then we'll return to panel three. We were in the midst of testimony from Mr. Hansen about 30 minutes ago when he was interrupted.

Senator DURENBERGER. Thank you, Mr. Chairman.

Jeff, I guess you are our next witness.

STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM THE STATE OF NEW MEXICO

Mr. BINGAMAN. Mr. Chairman, in the tradition of this august body, I will make my statement short and put my full statement in the record.

The two points that I wanted to—

Senator DURENBERGER. Jeff, if I could interrupt, do you have a constituent here by the name of Judith Espinosa?

Senator BINGAMAN. Yes. There she is.

Senator DURENBERGER. Why don't we ask Judith come to the table, as well.

Ms. ESPINOSA. Thank you.

Senator DURENBERGER. Thanks.

Senator BINGAMAN. Judith Espinosa is the Secretary of Environment in our State, and she is more knowledgeable than I on some of the specifics of the wastewater treatment needs.

Let me make a very brief statement here and then defer to her for any more in-depth comments she has.

There are two issues that I want to bring to the committee's attention as it works on reauthorization of the Clean Water Act.

One of those issues is the problem of colonias, which are communities that are situated along the U.S.-Mexican border, or within reasonable distance of the U.S.-Mexican border in rural residential areas. They are usually unincorporated. They are generally without paved roads. They are very small. Some of them are getting larger, unfortunately, but they are in the range of 250 to 5,000 people per colonia in New Mexico.

They have sprung up along the U.S.-Mexican border on the U.S. side of the border. Without adequate plumbing, without adequate drinking water, comprised of extremely small lot sizes many with mobile homes, they create a high rate of disease and severe health and environment problems.

This last year the Congress recognized the problem and appropriated about \$60 million to EPA for wastewater treatment grants in these areas, but it is clear that much more needs to be done.

We need to have clear legislative authority to deal with the problems of these colonias. These are a national problem, not a local or a State problem. They present a national problem that arises by virtue of our international border with Mexico.

So I hope very much that this committee will accept an amendment that we have prepared which would authorize, as part of the Clean Water Act, funding to go to these colonias for basic infrastructure and to deal with some of the health and environment problems.

The other issue I want to very briefly address is the problem we have with small, disadvantaged communities—wastewater treatment needs of small, disadvantaged communities—which are not incorporated and which have inadequate wastewater systems.

These are communities such as the South Valley in Bernalillo County. It is an area which is, unfortunately, too large to qualify for a rural grant, as that authority is in the law, but too small to shoulder the very high per-household cost of hookup to sewer services at this point.

What we need there, again, is an amendment to the Clean Water Act to permit Federal funds to help with construction through some type of financing.

I think, as I said, the South Valley in Bernalillo County is a prime example of this problem. We have about 12,000 citizens there who do not have adequate wastewater treatment, which can result in contaminating the drinking water in many cases. Some type of Federal grant program to assist in that particular circumstance I

think is a very worthwhile thing to look at as part of the Clean Water Act.

I will just stop at that point, and if you could take a few minutes to hear from Judy, that would be great.

Senator GRAHAM. Ms. Espinosa, it is a pleasure to welcome you.

STATEMENT OF JUDITH ESPINOSA, CABINET SECRETARY, NEW MEXICO ENVIRONMENT DEPARTMENT

Ms. ESPINOSA. Thank you, Mr. Chairman. I very much appreciate my being able to go with Senator Bingaman on these critical issues.

I am Judith M. Espinosa, the Cabinet Secretary for the New Mexico Environment Department. I would ask, Mr. Chairman, that my written testimony be entered fully into the record, which I believe I have provided staff.

I want to echo what Senator Bingaman says. When we talk about the international border with Mexico, we are not just talking about a very local or regional problem. And I don't think I am speaking out of turn when I tell you that colonias and the growth and development that has occurred over the last two decades is an increasing problem for all of the border States, and also the rest of the country.

I think as we move into a North American Free Trade Agreement consideration and we move into looking at environmental concerns along the border, it is imperative that, as Senator Bingaman sponsors Senate bill 1286, that we are able to fund much of the development on wastewater treatment that we will need in future years in the colonias.

I might also add, Mr. Chairman, that in looking at the Clean Water Act, that we also look, as Senator Bingaman stated, at disadvantaged communities. Again, although we are specifically concerned about New Mexico, this is a problem throughout the country.

There are many semi-rural entities around various urban areas that lose out on the long run to any kind of funding mechanisms now available to them. They are too poor to even pay back zero percent loans that States are able to offer them, and yet they can't get grant monies that are often scheduled for rural areas.

So we would very much appreciate it if the committee would look at the whole situation of disadvantaged communities as Senator Bingaman has defined in those semi-rural areas.

I might also say, Mr. Chairman, that last year New Mexico received \$10 million for colonias development. We have already gotten that money out, so it is already going to work. We received it. It was authorized in September, we received it in November. The design work is out there. It is working in the communities.

The first phase is the engineering designs, and the second phase will be the actual construction and implementation which we will start later on this fall in New Mexico.

So the States can turn around the money very quickly, and so when you give it to us it doesn't sit around and get wasted by any of our State agencies.

Also, Mr. Chairman, I would say that to allow the administrator to be able to issue grants for colonias wastewater treatment shouldn't just come without some kind of responsibilities from the States.

We are not here just asking for a handout, and we are not here just asking for a handout so we can give to local communities for wastewater treatment. We also feel that we must be responsible.

Let me give you a few examples of how New Mexico is responsible for the grant money it gives out.

Senator DURENBERGER. You'll have to do it quickly, if you can. Thank you.

Ms. ESPINOSA. Yes.

We would require each grant award that—we look at alternative and appropriate technology issues be evaluated, we look at things like constructed wetlands. We also look at upgrading on-site systems and not just developing a whole new system if it is not suitable or necessary. And, best of all, we are looking at comprehensive regional plans that will discontinue the exploitation of underprivileged people and lower socioeconomic people and get them wastewater treatment as much as possible.

And so I think that with our money we will also be responsible on the State end, and I urge you to support Senate bill 1286.

I thank you very much for your time.

Senator DURENBERGER. I thank you. You did a wonderful job in a very short period of time. We appreciate your being here, and especially Jeff and the leadership he always provides us on this issue.

If I may, I'm going to ask Paul Hansen to come back. He has about a minute left in his presentation. He has one point he wants to make strongly, and then my colleague, Joe Lieberman, is going to introduce the gentleman from Connecticut.

Mr. HANSEN. Thank you, Senator Durenberger.

As I mentioned to the committee prior to our break, the Izaak Walton League has been very active on Mississippi River issues since 1924 when League-sponsored legislation established the Upper Mississippi Wildlife and Fish Refuge.

I'm here today with one simple request, and that is that we add to this legislation special designation for the Mississippi for watershed planning such as has already occurred for the Great Lakes and the Chesapeake Bay.

We have heard some very eloquent statements today on how effective that special designation has been, and we desperately need this in the Upper Mississippi region.

As you know, the floods of 1993 would have been devastating to human development on the historic floodplain under any management scheme, but it is clear that this has been made worse by the drainage of wetlands, channelization of the river, and proliferation of levees. This is the second 200-year flood that we have had in the past 20 years, and hydrological analysis has shown that this flood was two feet higher than a flood in 1844, even though the flow was 35 percent less.

This flood highlights the fact that the U.S. Army Corps of Engineers manages the Mississippi in a manner that sacrifices the multiple purposes of river management, including flood control, envi-

ronmental management, and recreation, for the single purpose of navigation.

The balanced use called for by Congress on numerous occasions still has not been accomplished on the Mississippi.

For example, in March of this year the Corps has announced the beginning of a \$33.6 million feasibility study on \$4.8 billion worth of navigation capacity expansion measures.

We in the region find it to be a cruel irony that \$33.6 million will be spent on the evaluation of navigation expansion on single-purpose use with little or nothing spent on overall watershed planning for the beleaguered Mississippi region.

This is especially important in light of a recent report, "Transportation and Iowa's Economic Future," performed by the University of Iowa's Public Policy Center, which concludes that it is significant that even with a major subsidy the cost of shipping grain from Iowa elevators to New Orleans is only marginally cheaper by barge than by rail.

The study concluded, "In the case of large-scale capacity enhancement of locks and dams in the Mississippi, the large costs and uncertain demands argue against advocating these investments at the present."

So I am here today not to tell you that I have all the answers to management questions raised by the floodwaters, but to tell you that we need answers to these questions very desperately in our region.

We request that you add a provision for watershed planning to this legislation, a study that could provide information on how we can best achieve objectives for flood control for the environment and for navigation.

Thank you very much for this opportunity to testify. My full statement has a number of more specific recommendations.

Senator DURENBERGER. Thank you, Paul.

Senator GRAHAM. Mr. Hansen, I regret that the votes caused me to miss both ends of your testimony.

Senator Lieberman?

Thank you, Mr. Chairman. The schedule obviously in the Senate today is such that we are being peripatetic, and at the same time regretful. I want to express both my regrets and admiration for John Atkin from Connecticut who has been here testifying today.

I have read John's testimony, and I salute him for it and really more generally for the extraordinary leadership that he has shown in bringing together a unique precedent-setting coalition of environmentalists, labor leaders, workers, construction industry people, business generally, all recognizing shared interest in cleaning up the sound and the specific case of infrastructure investments in upgrading the sewage treatment facilities that must be upgraded if we are going to clean the water. That requires money.

It also, as John has noted, not only will clean up the sound—or will help to do so—but will generate jobs. A sewage treatment plant investment generates as many, and in some ways more jobs than building a highway or a bridge, which has been our traditional vision of what infrastructure investment is about.

And it also has the same kind of spin-off in terms of quality of life and improvement of economic condition generally—attractive-

ness of a State, attractiveness to business, job creation—that other forms of infrastructure have.

Thank you, Mr. Chairman. I wanted to specifically thank John for coming down. I apologize that I could not hear his testimony. We look forward to working together with you.

Senator GRAHAM. Thank you very much, Senator Lieberman.

Senator Durenberger, I want to thank you for continuing the hearing. Do you have any questions?

Senator DURENBERGER. No. Thank you very much.

Senator GRAHAM. Senator Chafee, questions?

Senator CHAFEE. No, thank you, Mr. Chairman.

Senator GRAHAM. I want to thank this panel for an exceptionally instructive set of statements.

As the first panel, you have impressed us again with the importance of maybe thinking globally but acting locally as an operating premise.

Also, the leadership by example that your past experiences are going to provide to other areas of the Nation will be extremely helpful.

I just spent a few moments with Mr. Baker to ask some questions about the Chesapeake Bay Foundation for purposes of some similar possible organizations in my State, so I especially thank you for giving us that model to follow.

I want to again express the committee's appreciation for your being here today, and particularly for your patience in a somewhat disjointed morning.

Thank you.

We are going to make a slight change in our schedule by merging panel six and a portion of panel eight so that we can have a concentrated discussion on the situation in Boston Harbor.

Panel six is Senator John Kerry, who is with us; Senator Kennedy, who also joins us; Mr. A. Paul Cellucci, the Lieutenant Governor of the Commonwealth of Massachusetts; Mr. Doug McDonald, the Executive Director of the Massachusetts Water Resources Authority.

Senator Kennedy?

STATEMENT OF HON. EDWARD KENNEDY, U.S. SENATOR FROM THE COMMONWEALTH OF MASSACHUSETTS

Senator KENNEDY. Thank you very much, Mr. Chairman, Senator Chafee, and the others.

First of all, I want to express our appreciation very much to the members of the committee for the opportunity to make this presentation and for your courtesies to myself, Senator Kerry, our Lieutenant Governor Paul Cellucci, who is here and testifying, and Doug MacDonald of the MWRA.

We will try—we understand the interruptions which have taken place over the course of the morning, and that will continue, so we don't need to take a great deal of time.

I want to thank you also for the opportunity to visit with you at a more leisurely pace, and other members of the committee, in going into very considerable detail on this issue, and we are grateful to you for the preparation that you did and the knowledge and

the understanding that you have about this particular undertaking.

The members of the committee may be interested in the history about why Boston is in the situation that it is, and we are prepared to provide the various information which I think would indicate very clearly shared responsibility between governmental agencies and State officials.

I personally believe, in reviewing it, that it lies more with the agencies, but that really is very much in the past.

Second, the efforts to try to clean up Boston existed long before 1987 when many of the other cities across the country were moving forward to take advantage of the then Federal resources that amounted to 75 to 80 percent of the cleanup in a number of the other communities. But after 1987, a number of the communities—just two or three, actually—were really left behind when they were trying to come to grips with the monumental challenges of cleanup, and then to have the court requirements for cleanup.

The greatest example that we are speaking about directly today is Boston, but we have a number of other communities that are familiar to the Members down in the Bedford/Fall River and other communities in our State.

Nonetheless, what we are saying here, Mr. Chairman, is that the Clean Water Act is basically a partnership between the local citizenry, the State, and the Federal Government. What has happened now is that there is really only one individual or one group of individuals involved, and that is the local ratepayers.

What has happened now, as you will hear, is that Boston ratepayers have moved from 10 or 15 in terms of where they were paying over three or four years ago to number 1, a 300 percent increase in the last year or last two years, and that is going to increase to more than \$1,000 in the next three years. Some have estimated it will go even double that in the next five to seven years, and virtually prohibitive.

It is higher than local taxes, higher than Federal taxes, and it is falling on almost half of the population in that State.

A great deal of focus and attention is on reconciliation, on health care. People in those communities care about one thing, and that has been the increase in their water rates, which is effectively bankrupting them. It falls within a particular difficult period of time because of the economic pressures on those communities.

These are, by and large, working class communities. By and large senior citizens own those homes. The dramatic adverse impact that is having in homes in not only the immediate Boston area, but effectively almost half the total numbers of the State, has been absolutely dramatic.

The cleanup of Boston Harbor, when it takes place, is unlike a building or a bridge. The benefits will be for 100 years. There will be individuals, companies, and corporations that will make millions and even billions of dollars on that down the road. We know that. We understand that.

But now the pressure is in terms of this particular group of homeowners. We want to share partnership. We want to share partnership between the ratepayers, between the States, and the Federal Government.

We are asking you specifically for the short-term reauthorization to the Clean Water Act. We are talking about the changes in the Clean Water Act that we will outline in my own testimony that we hope will be supported. And we are very hopeful, as well, that in the Clean Water Act there is going to be attention given to other communities that exist in our State to provide some relief to them as they are moving under these court mandates.

And we are also going to ask you for continued coverage of the national estuary statute so that communities that have been incorporated as in the cleanup of Narragansett Bay can be continued because very, very important work is being done there, and we also want to make sure, under the national estuary program, that section 320 will be included, as well.

Finally, Mr. Chairman, because I see the clock is on, just to give you some idea of what is happening, we are mad and we won't take it. Fed up. The panel votes not to pay the MWRA. The tax rebels jump your water rates.

The fact of the matter is this is not going to work. It just isn't going to work as it is constructed now. People haven't got the resources to be able to do it.

As you will hear later, you've got major investments now that have already been done. It isn't a chance of stopping and going back. This is an absolute public policy and real kind of a crisis that all of us are attempting to try to find ways of doing it.

You will hear recommendations and ideas and suggestions and flexibility to try and permit the program, itself, to be altered and changed, to take into consideration new technologies, changes in the program to try and bring some reductions in terms of the total cost. That will be testified to this morning.

But we believe this is a matter not just in terms of Boston and a number of the communities, but it is a matter of enormous national importance.

I dare say that if we are unable to at least come to grips with this kind of a situation, then the kind of commitment that this country has made to try to do something about clean water in our society is really going to be threatened and undermined. I think all of us want to avoid that.

Mr. Chairman, I would like to file my full statement in the record. Again, I am grateful to you for the opportunity to make this presentation and for permitting our panel to make their comments.

Thank you.

Senator GRAHAM. Thank you very much, Senator. Your statement, as well as all the statements of the participants today, will be fully stated in the record of this hearing.

Senator Kerry?

**STATEMENT OF HON. JOHN KERRY, U.S. SENATOR FROM THE
STATE OF NEBRASKA**

Senator KERRY. Thank you very much.

There is not much that hasn't been said at this point, but let me briefly emphasize a few key elements.

First, I want to thank the committee. This is not an easy task that you have to undertake now, but I'll tell you it is a most important task, and I think you understand that, but I just want to underscore it.

The final remark of Senator Kennedy bears further comment as we reflect upon the goals of the Clean Water Act and the road we have travelled.

In the 1970's and in the 1980's, we had anywhere from 50 to 80 percent federal participation to assist communities in the effort to upgrade major water treatment facilities and sewer projects in America. For various reasons, none of which anybody can do anything about today—court disagreement, siting dispute—the money was not shared in during those 1970's and 1980's in Boston. Moreover, Boston never had a primary treatment plant.

So Boston is starting from scratch here. It has to build the primary and the secondary treatment facilities as well as the combined sewer overflows and other water projects that go with it.

The very simple fact remains that this is not just a Boston problem. This is a problem in all of the United States where the partnership that once existed has broken down and disappeared. We are not going to have the capacity to build a consensus in this country for reauthorizing the clean water or safe drinking water acts, or for most of the environmental cleanup efforts, unless that partnership is reestablished.

Whereas most of the communities in this country got anywhere from the 50 percent to 80 percent I talked about in federal support, Boston, at the end of this project, at the current rate of participation, will receive just 8 percent. That's 8 percent partnership for a Federal mandate, court-ordered completion schedule that is going to require a ten-year span of citizens to make up for 100 years of use and provide for the next 100 years of use.

It doesn't make sense.

But not only does it not make sense; it is not doable. As the headlines indicate, you've got a daily fanfare of discussion on all of our talk shows and in all our newspapers. You can't go out to any meeting without meeting headlong a rightful—not a misplaced—sense of anger. This is a rightful sense of anger. You've got people who are concerned about having their water shut off. You've got water being shut off in some places because it is the only means of enforcement.

So we have a major predicament. President Bush tried to address this for years. We had \$100 million a year, as the Senator from Rhode Island knows and participated so much in helping secure that funding. The Senator from Florida understands that. But now we continue to struggle.

The Clinton Administration wants to follow through with its \$100 million pledge for the coming fiscal year, but the authorization needs to be there. So there is the immediate problem of the authorization for \$100 million.

But even with the \$100 million schedule, I want to reiterate we come out at just 8 percent Federal participation, which is simply not enough for a complete overhaul that takes you over \$3.5 billion for the treatment and another \$2 billion-plus for the combined

sewer overflow and your other water projects that go along with it, for a total of \$5.7 billion or so.

So we really do need to get help. We in Massachusetts have helped many citizens in other parts of the country with hundreds of other projects over the years. If we are going to maintain support for major Federal projects and for the larger interests of the Clean Water Act, it is going to be imperative to find a way to reestablish that partnership now.

These 81 communities, which represent 2.5 million people of our 6-plus million population, are really seeing the fabric of our community torn apart.

What is happening is families that can't make it are saying, "We can't live here," or "Maybe we ought to go somewhere else." That rips at the whole structure of our community and at people's sense of the future and their optimism. I know the Senators understand that.

So we implore this committee to help us to find a way to reestablish that partnership, and to do not just what needs to be done for Boston, but what needs to be done nationally as other communities face the same kind of problems all across this country.

Senator GRAHAM. Thank you very much, Senators. We appreciate both of your eloquent statements.

Lieutenant Governor Cellucci?

STATEMENT OF HON. A. PAUL CELLUCCI, LIEUTENANT GOVERNOR, COMMONWEALTH OF MASSACHUSETTS

Mr. CELLUCCI. Thank you very much, Senator Graham, Senator Chafee, Senator Durenberger, Senator Boxer.

I, too, appreciate the opportunity to testify before this committee today, particularly on a panel that is so well represented with the distinguished Senators from our State, Senator Kennedy and Senator Kerry.

On behalf of Governor Weld and the Commonwealth of Massachusetts, I would first of all voice our strong support for the legislation, S. 1114, that we would like to see enacted in this session.

Since the passage of the Clean Water Act in 1972, the Nation has seen a vast improvement in the quality of our water resource. But the effectiveness of the act has been diminished as we discover the true toll of environmental threats such as nonpoint pollution not envisioned in the act, and witnessed the promise of pollution prevention technologies only recently devised.

As we know only too well in Massachusetts, the cost of clean water has become staggering for ratepayers and governments, alike. Here, too, the funding provisions of the act no longer serve their intended purpose.

The Baucus/Chafee bill is an excellent vehicle, we believe, for addressing these water quality problems and opportunities.

Most importantly for Massachusetts ratepayers, the bill will help relieve some of the extreme financial pressures that are expected to boost the average water and sewer rates, as has been mentioned, in the Boston metropolitan area to over \$1,000 per year per household by the year 2000.

I can't over-emphasize the hardship that this will impose on the citizens of the metropolitan area, on families, on elderly. It will force many citizens to lose their homes.

The proposed \$2.5 billion authorization level for State revolving fund capitalization is desperately needed.

And while we'd like to see the SRF pie even get larger, we see greater equity in how the bill proposes to allocate the slices—that is, according to a formula based on actual documented water project needs rather than population—for example, additional assistance for communities like Boston, where there are very high capital costs associated with providing for secondary treatment.

We believe that provision should be phased in rapidly to deal with the fact that, relative to other States, Massachusetts has project needs that are disproportionately large.

We also recognize that the State has a significant role to play in these financial pressures. In this regard, I'd like to inform you that Governor Weld just signed into law a ratepayer relief appropriation of \$30 million in the fiscal year 1994 budget. We will also ensure that the State SRF is adequate to capture all available Federal dollars on an ongoing basis.

In addition, our administration has initiated a rigorous audit to review the Boston Harbor project to identify possible areas of cost savings.

But the main point that I would like to make today is that, while the State can do many things to help soften the blow to ratepayers, the magnitude of the cost associated with required water treatment projects far exceeds the capacity of the State government or the ratepayers to bear them. Substantial Federal relief is necessary, both in terms of funding and in terms of increased flexibility.

Beyond the SRF, President Clinton has requested \$100 million for the Boston Harbor cleanup. Senator Kennedy and Senator Kerry have filed a bill that would allocate \$200 million a year for the next five years for the Boston Harbor cleanup.

That magnitude of relief is desperately needed if we are to provide assistance not only to our ratepayers, but continue to improve the economy of Massachusetts.

We recognize that in the Baucus/Chafee bill there is flexibility in using SRF monies where they can be put to best use in protecting water resources. This means that, in addition to the traditional water treatment works projects under the provisions of the bill, we would be able to obtain infrastructure funding for combined sewer overflows, stormwater control, nonpoint pollution control programs, and other effective measures.

We think that's the way to go.

I have submitted written testimony that has other details.

The other point I would make—and I'm sure Doug MacDonald will make it—is this project is well underway. All you have to do is go out and visit Deer Island, as I have recently, and the primary treatment facility is well underway. This is a project that we are committed to. We are committed to cleaning up that harbor, but we need a little help and we hope that the Congress can provide it.

Thank you very much.

Senator GRAHAM. Thank you very much, Mr. Lieutenant Governor.

Before we turn to Mr. Doug MacDonald, a schedule point.

We have now completed all of the panels but for two persons who were on panel eight, Mr. Tom Behr, the Deputy Mayor of San Diego, and Ms. Judith Espinosa, New Mexico Environmental Department Cabinet Secretary.

When we complete this panel, we will hear from those two remaining witnesses.

Senator Boxer is here. She has a statement relative to the situation in San Diego. To our two colleagues, I know the pressures of your schedule. We appreciate your staying with us. Whenever you need to go to your next responsibilities, you are welcome to do so.

Senator CHAFEE. Mr. Chairman, I would just like to express our appreciation to Senator Kennedy and Senator Kerry for coming and outlining this situation.

My own view is that there is no point in replaying what took place in the past. Let's look and see where we are now and see if we can do something about it, and so I thought their testimony was very effective, and that of Lieutenant Governor Cellucci.

Senator GRAHAM. I share those remarks. I also correct myself. Ms. Judith Espinosa in fact made her statement while I was at the vote, so we have one remaining witness, Deputy Mayor Behr, who we will hear from at the conclusion of this panel.

Mr. MacDonald?

**STATEMENT OF DOUG MacDONALD, EXECUTIVE DIRECTOR,
MASSACHUSETTS WATER RESOURCES AUTHORITY**

Mr. MACDONALD. I thank you, Mr. Chairman.

Senator CHAFEE. Mr. Chairman, if I might interrupt, I have read Mr. MacDonald's testimony, and appreciate and will review also what he says. Unfortunately, I have to go now.

I want to thank particularly Lieutenant Governor Cellucci. He has been a very effective Lieutenant Governor of his State. We are neighboring States, so we hear about his activities up there. He is doing a splendid job, along with Governor Weld.

Mr. MacDonald, I look forward to reading any other comments that you might have and regret that I have to leave.

Mr. MACDONALD. Thank you, Senator.

Senator GRAHAM. Mr. MacDonald?

Mr. MACDONALD. Mr. Chairman and Senators, as the Director of the agency that is charged with this project, I would just like to make a couple of comments to expand on my written statement that I have submitted and to reinforce several of the points that have been made here.

From the standpoint of having the opportunity to talk to this committee, which has had a long interest in this project, I think the most important thing we have to say is: Boston got the message.

It got the message that the recalcitrance, the history to which the Senator has just referred to, is over. And today on Deer Island we will spend about \$3 million in construction on this project. It will be another \$3 million tomorrow. In the course of this fiscal year, \$500 million will be spent, embodying the commitment of our agency to comply with the Clean Water Act.

The rate shock problem which you have heard from bipartisan testimony before you today is very, very real, and it has the capability of crippling our compliance program.

Many excellent things have happened. Through the assistance of Senators Kennedy and Kerry we have the proposed appropriation. We have the State contributing to this effort, which the Lieutenant Governor has spoken of and which we are very pleased. S. 1114 also shows great leadership and responsive ties to people like ourselves who are in the environmental business.

I would like to suggest just three or four things that would help us deal with our specific situation that has been described in my testimony.

First, we really do need help with the authorization that must be obtained before the end of March in order to release the appropriation that was included in the Clinton Budget. We would be very grateful for your committee's assistance in insuring that authorization language is included in this bill.

Second, we believe that S. 1114 should include a special program of grant assistance to communities with very high capital costs and skyrocketing rates that is the result of compliance efforts to meet secondary treatment requirements under the Clean Water Act. We would welcome the addition of that kind of element to your bill.

Third, we need a higher level of funding for our project and others similarly situated. This is never going to be a Boston-only problem, and I think we see this increasingly across the country. We would be very grateful for your assistance in following the lead of Senators Kennedy and Kerry in Senate 350, in which they have suggested a total appropriation for our program on the level of \$200 million annually over the next five years.

If that were done, it would bring the total level of Federal participation in our Clean Water Act compliance program for Boston to about 32 percent—hardly large by the scale of what other cities and areas around the country have received.

Fourth, we hope that the needs formula that is developed in the bill can look to the present and the future, look to economic situation and rates, as well as simply the scale of needs, and can be cost-effective in the way it delivers Federal assistance to communities like ours which need your help.

From our standpoint, there is nothing that I, as the director of the agency, and we in Boston want to do more than finish the compliance efforts that we have begun. I hope that you can appreciate the challenges we face and our pledged that we have had an opportunity to tell you about our project and persuade you of the vigor with which we are moving forward. But we really have to say to you, "Please don't abandon us now."

Our community is making a significant fiscal investment to make this happen. Even with the levels of effort that we have talked about today, we would still be funding 65 percent of the project. But for us to continue and not to see the project shipwreck on these rate issues which have now become so problematic in our communities, we would very much like to ask for your assistance in any way you can along some of the lines that we have suggested or others.

I might also say that inasmuch as we are, like so many other people who speak to you, people who are in the wastewater business generally, if there is any other topic or issue apart from our specific situation where we can be of help to you and your staff, we would very much like to be called upon and render you any assistance we can from how we see the issues at the local viewpoint.

Thank you.

Senator GRAHAM. Thank you, Mr. MacDonald. I appreciate your testimony today, as well as the Lieutenant Governor and our two colleagues. I appreciate the long-term commitment that each of you has made, and what is being asked of the citizens of Boston now to meet this challenge.

We will be very mindful, and I hope a very contributing partner in that coalition which you have all spoken of as being necessary to solve this local issue but with very great national implications.

Mr. MACDONALD. Thank you very much.

Mr. CELLUCCI. Thank you, Senator.

Senator GRAHAM. Thank you.

Mr. Tom Behr, Deputy Mayor of the City of San Diego.

Mayor, we have been joined by a very distinguished member of this committee who has made a great impact in her first months of service in the United States Senate, particularly on environmental issues. Senator Boxer I understand has an opening statement.

Senator Boxer?

OPENING STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. I do. Thank you so much, Mr. Chairman.

It is within the five-minute rule.

I want to welcome Deputy Mayor Behr to Washington. I want to thank you, Mr. Chairman, for allowing me to address and for him to address the subcommittee on a subject that is very important to San Diego, which is the second-largest city in California and the sixth-largest city in America.

I think it is an issue that we can work on that will be fairly easy to solve. I really do believe this. We are not asking for funding. This is kind of a different issue.

So if you will allow me, let me give you a brief overview.

I wanted to state to the Deputy Mayor and to you that I am at this point 30 minutes late for a health care meeting, so if I leave you with the Deputy Mayor, will you take good care of him? And then I'll run off because the First Lady is there and I feel like I should be there.

Senator GRAHAM. We will give to the Deputy Mayor the same level of hospitality and good treatment that we have given to everyone else.

Senator BOXER. That sounds like a very good promise.

Mr. Chairman, it is reauthorization of the Clean Water Act, Congress will determine whether San Diego will be required to spend over \$1 billion to meet a standard that the experts say offers no measurable environmental benefit. Let me repeat that.

At this point, San Diego is being asked to spend \$1 billion under the Clean Water Act. If we don't change it and make it more flexi-

ble, they will spend \$1 billion, and the experts say it won't make any difference to the water quality. This is a very important point.

To give you a little bit of background, because I know Deputy Mayor will give you a lot of background, San Diego is in a unique position both geographically and environmentally. Situated a few miles from Tijuana, Mexico, the city has been put in the difficult situation of having to treat waste coming from both sides of the border.

While we now have a Federal program in place to pay for the construction of a sewage treatment plant in Tijuana, for years San Diego has borne a tremendous financial burden as a result of its location near the border.

San Diego is also located along the Pacific Coast, as you know, at a point where the outer continental shelf is very narrow and the ocean gets very deep within a very short distance from the shore.

The ocean water is cold all year and, of course, it gets colder the deeper you go. I make these points because it impacts on its treatment of the water.

The city is currently treating its wastewater to an advanced primary level before releasing that wastewater into a 2.5 mile long ocean outfall, which is currently being extended two additional miles to a depth of 320 feet. So they are extending this outfall.

But under the current Clean Water Act, San Diego is required to treat its wastewater to a secondary level, not an advanced primary but to a secondary level.

I have been advised by scientists from the University of California's Scripps Institute of Oceanography that 25 years of data show that there is no environmental damage to the marine environment from the existing outfall. Let me repeat, no environmental damage to the marine environment from the existing outfall. That's the University of California's Scripps Institute of Oceanography making that point.

Apparently, the great depth and cold temperature of the water create a situation found in few other places in the country. The extended outfall will provide even greater environmental protection. But if we don't change the Clean Water Act and make it more flexible, it is going to cost San Diego \$1 billion—more than \$1 billion—to bring its waste treatment from advanced primary to secondary.

Now, in closing—and I'll put the rest of my statement in the record. I don't think I need to talk on and on—the bottom line here is that I think that if you looked at environmental records of people in the House and in the Senate, I was listed as number one in the House, and I'm hoping to match that in the Senate.

But, to me, to make a city that is so strapped, as all our cities are, spend money—\$1 billion, plus—and get no environmental benefit is an outrage.

I know, Mr. Chairman, you are a pragmatist and an environmentalist, as I am, and I hope we can work together on this because we don't want to hurt our cities unnecessarily. Believe me, if I believed that this would make everything better and safer and more environmentally sound, I would be here leading the charge fighting to get money for San Diego to help them do it.

But experts tell us that we are doing just fine with the plan that they have in place, and I hope that we have it within our power—I know we do. I hope we have the wisdom to move to allow them to continue their plan without having to spend this additional money.

Thank you very much for this chance to talk at you, and I will work with you as this process goes forward. You are doing an excellent job. We appreciate your caring about the cities of our great country.

Senator GRAHAM. Thank you very much, Senator. I appreciate your statement and the clarity with which you have outlined the issue facing the city of San Diego. We look forward to hearing from the deputy mayor.

Now that you have attended to the financial health of the city of San Diego, will you take equally good care of our physical health with the First Lady?

Senator BOXER. I will try.

STATEMENT OF TOM BEHR, DEPUTY MAYOR, CITY OF SAN DIEGO

Mr. BEHR. Mr. Chairman, I know I will be in good hands today, just as the city of San Diego is in good hands with Senator Boxer's support on this specific issue. I, too, would not be here if I felt we were harming the environment.

Thank you very much for inviting me to testify.

I would say, notwithstanding that I am a transplanted easterner, having canoed for days on end on the Susquehanna to go back to my home town of Binghamton, New York, and having played and fished in the Chesapeake Bay when I worked here in Washington a lot of years ago, notwithstanding that, I do want to thank you for saving the best for last. That's not me, but that's the State of California and specifically California's crown jewel, the city of San Diego. I hope that you come out and visit us some time.

There are two requests that I make to your committee.

The first is that the Clean Water Act bill be written to allow the city to continue to use advanced primary treatment where there is a deep ocean outfall which provides the equivalent environmental protection of secondary treatment.

The second is that wastewater reclamation be in capital improvement or distribution systems, be eligible for funding under title six of the act.

We look at the San Diego region as a broad ecosystem where we face a variety of water quality threats from nonpoint source runoff, as the Senator said, from Mexican sewage flowing across our border, and from a need to enhance our long-range drinking water supply.

It is very important to our residents that the act allow the city to utilize its scarce funds to protect the environment by continuing the use of our Point Loma advanced primary treatment facility in conjunction with its deep ocean outfall, and an ambitious wastewater reclamation program.

Unfortunately, the existing act does not allow for the city to make the best use of resources. The act ignores sound science, it ignores regional differences, and it ignores new technology for treating sewage.

The existing law will cost San Diego ratepayers an additional billion dollars, not even including the financing charges to accomplish full secondary.

However, with a deep ocean outfall there is no demonstrable difference in environmental impact between secondary treatment effluent and San Diego's present advanced primary treatment effluent.

We have an ocean floor that slopes steeply, accessing cold, deep marine waters within a few miles offshore—an open coast, swift currents, and dynamic mixing. We also have in place the technology needed to ensure environmental protection.

Our state-of-the-art advanced primary treatment plant at Point Loma discharges in 220 feet of water over 2 miles off shore. Our new outfall extension now under construction will discharge even farther off-shore—as the Senator pointed out, 4.5 miles into 320 feet of water.

This extension will make the outfall the longest and deepest reinforced concrete structure in the world.

San Diego has monitored the effects of the existing advanced primary discharge on the marine environment for over 25 years and has found that there is no significant impact, and that's corroborated by Scripps Oceanographic scientists.

In the EPA's 1991 Federal lawsuit against San Diego, the court considered a significant amount of evidence submitted by the country's best scientists—ours and yours—and found that there is no adverse impact. That is a validated judicial finding.

Additionally, the National Academy of Science's April report confirms what San Diego has been saying for years—advanced primary treatment is appropriate for San Diego's deep ocean environment.

The report provides a scientific foundation for you and for Congress to protect the coastal marine environment by amending the Clean Water Act to reflect regional science and geography.

In regard to water reclamation, San Diego has caught its potable water demand through an extensive conservation program. A 20 percent reduction has been achieved.

And I have to note that in discussions about the arid States and 12.5 or 15 inches of rain, San Diego has an average rainfall of 9.5 inches, which is why we import more than 90 percent of our potable water needs.

We now look to water reclamation as the next major step and think that it should be considered in the amended act. Reclamation is a tool for wastewater management because it is folly to dump treated effluent in the ocean when it can offset demand for potable water.

We have a long-term strategy for wastewater treatment and reuse and environment protection, and it is called the consumers' alternative. That is underway, and that's a committed cost of \$1.8 billion without the cost of financing added. That does not include a \$1 billion upgrade to secondary at Point Loma.

The major element of our program is a new 30—expandable to 55—NGD wastewater reclamation plant at a cost of \$166 million. That plant is under construction today.

I mentioned earlier my concern over significant cost if amendments do not include consideration of our unique circumstances. It is even more of a burden when you realize that because San Diego meets the State ocean plan we have a low priority for SRF loans.

In addition, from 1970 to 1986 we have received just \$95 per capita grant funding, only 25 percent of the Statewide average. From 1987 to today we have received just \$30 million. Consequently, 99 percent of the costs that I have described will be paid for by local ratepayers. That can't be what Congress intended when it passed the Clean Water Act in 1972.

In conclusion, Mr. Chairman, San Diego has a strong wastewater management program that includes treatment, construction, conservation, and reclamation at a cost of \$1.8 billion. It is critical that your clean water legislation provide San Diego with a framework to protect our precious coastal waters without spending an additional billion dollars plus on treatment facility upgrade that provides no discernable additional benefit to the environment—a point that I think Senator Boxer has made several times for you.

Thank you for the opportunity to be here today.

Senator GRAHAM. Thank you very much, Mr. Mayor.

Let me ask a couple of questions.

Coming from a State which has also faced the issue of the level of treatment required to discharge effluent, but recognizing that our situation in relatively shallower waters and warmer waters may be different, is your situation one in which the Environmental Protection Agency is requiring you to install secondary treatment and you feel that either EPA does not have sufficient flexibility to take into account your special circumstances or, having that capability, EPA has chosen not to do to?

Mr. BEHR. In my dealings—and they have been extensive—with the EPA, I do feel that they have shown a great deal of interest in understanding, but I think it is more the former that you were pointing out—the lack of flexibility.

The may certainly not want to admit it, although it has been said in various means and testimony that we have not been harming the environment. We are still under litigation with EPA, almost to the point I would consider it harassment. But the fact that we have the equivalent of the environmental protection of secondary has been our position all along, as justified or not, but the things I have mentioned to you. That, under the present act, is hard for the EPA to accept at this point.

Senator GRAHAM. What is the current state of your litigation with EPA?

Mr. BEHR. We have a consent decree that we had entered into with the EPA in January of 1990 that the judge has not entered. That consent decree is looked upon as a living document by the judge and by us. It has provisions for changes to it. And it is not in a stay pattern by the judge as we go through further testing at Point Loma to see whether additional solids can be removed. It also provides within the consent decree legislative relief which would then change the terms of the consent decree and the impositions placed on San Diego.

Senator GRAHAM. You mentioned your interest in recycling—an interest that I applaud. Will you be able to do recycling with ad-

vanced primary treatment, or will that require additional levels of treatment?

Mr. BEHR. No. The reuse/recycling that I was referring to was reclaimed water through the tertiary level. In California we still have the situation of State requirements not making such water totally available, say like the Lower Occoquan Reservoir, which has additional levels of tertiary treatment. We are contemplating yet still we would require tertiary treatment and then be able to use it for agriculture, for injection in aquifers, and/or for irrigation purposes throughout the city.

But that comes with a rather large, rather substantial price tag. That is what I was also addressing in my remarks to you.

Clearly for us one of the long-term benefits if we can all invest in reclaimed waters through the tertiary level and use it hopefully at some point for all purposes—certainly at least now for those purposes other than for drinking water. That's not only San Diego, but would be any arid area of the country.

Senator GRAHAM. Mr. Mayor, I appreciate very much your coming this long distance to share with us the special circumstances of San Diego. I would agree with my colleague that yours is one of the beautiful cities of America. I appreciate your invitation to visit, which I have been able to do on a number of occasions in the past and look forward to doing so in the future.

Mr. BEHR. Thank you for your consideration. I just hope that you do and the other members of the committee, and Congress understands the unique situation of deep-ocean dischargers like the city of San Diego. We welcome you there and hope that you bring in hand the appropriate amendments to the Clean Water Act that will make us all very happy.

Senator GRAHAM. The first time I went was to visit the zoo. The next time was to visit the wastewater treatment plant.

Mr. BEHR. I would also ask—I'll submit this to staff. I have my formal comments for the record in addition. I don't believe they were attached. I talked to Bill. The Union Tribune, our local paper, has a very concise editorial on the Clean Water Act and its impact on San Diego, and I'd appreciate being able to get that—

Senator GRAHAM. All of the materials that you would like to submit will be included in the record. There also were previous witnesses who had materials, including Congressman Laughlin, who was unable to appear. Those statements will also be part of the record.

Senator GRAHAM. If there is no further testimony, the meeting is adjourned.

[Whereupon, at 1:14 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

TESTIMONY OF DAWN M. MARTIN, AMERICAN OCEANS CAMPAIGN,
WASHINGTON, DC

INTRODUCTION

Good morning, my name is Dawn Martin and I am the Director of the Washington Office for the American Oceans Campaign (AOC) and the Coordinator for the National Coastal Caucus (NCC). AOC is dedicated to conserving and enhancing our

nation's oceans and coastal resources.¹ The NCC is a coalition of regional environmental organizations working collectively to fight pollution in our oceans, estuaries, bays, beaches, and wetlands.² On their behalf, I wish to express my thanks to Chairman Graham (D-FL) for inviting us to testify and for all the work he and the Committee staff have done in scheduling this very comprehensive series of clean water hearings. In addition, I applaud Chairman Baucus (D-MT) and Senator Chafee (R-RI) for introducing S. 1114, which has served as the vehicle for discussion in these hearings. Attached to my testimony are two letters of support from the NCC on legislation that I will discuss in my testimony. I request that the Committee include these letters in support of S. 815, the Water Pollution Control Estuary Restoration Act, and the S. 997, the Beaches Environmental Assessment, Closure and Health Act as part of the record for this hearing.

Since the original Federal Water Pollution Control Act (Clean Water Act) was signed into law its provisions have been revised on numerous occasions. With each reauthorization, Congress has strengthened efforts to protect our coasts from pollution. Once again you are faced with this daunting task, and we believe that the time is right to implement even greater protections. The critical state of our National aquatic ecosystems and our global environment demand the immediate attention and help of the 103rd Congress.

Citizens of this Nation are becoming increasingly aware of our earth and its abundant, yet limited, resources. *According to a recent Gallup poll, approximately two-thirds of the U.S. public are "greatly concerned" (the highest rating) about the contamination of drinking water, and pollution of lakes, rivers, and beaches.*³ Even in light of the extreme financial restrictions currently facing our state and federal treasuries, the public has consistently called for increased environmental protections, while acknowledging the high cost of some of these programs. Similarly, the Wirthlin Group conducted a poll last July and discovered that 80 percent of Americans think "protecting the environment is so important that requirements and standards cannot be too high, and *continuing environmental improvements must be made, regardless of cost.*"⁴ And finally, the election of President Clinton, Vice-President Gore and the overwhelming victories at all levels of government of those who ran their campaigns on an environmental platform, indicate the high level of concern people of this nation have for protecting the environment.

Clearly, citizens of this country understand the potentially disastrous short and long-term environmental, social, and economic costs of delaying environmental protections. Realizing it is more costly to tackle environmental problems with a Band-Aid approach, the public desires and deserves a comprehensive and strategic planning process that protects its natural resources and is aimed at cleaning up and preventing pollution from occurring in the first place. This theme will guide me in my remarks today.

The primary focus of my testimony will be on the National Estuary Program and the strengthening language proposed by Senator Lieberman (D-CT) in S. 815, and I will be speaking in support of the beach protection legislation as offered by Senator Lautenberg (D-NJ) in S. 997.

PROTECTING AQUATIC ECOSYSTEMS THROUGH A WATERSHED APPROACH

A fundamental goal of the Clean Water Act is to maintain and restore the physical, chemical, and biological integrity of the nation's waters. During the past twenty years, however, the Environmental Protection Agency (EPA) has dedicated much of

¹ AOC is a non-partisan, non-profit organization founded in 1987 and dedicated to the restoration and preservation of the world's oceans. Our efforts are rooted in the premise that the earth's environment is dependent upon healthy oceans. Our mission is to work to protect the vitality of coastal waters, estuaries, bays, wetlands, and deep oceans. We accomplish this goal by educating the public and decision makers on the need to protect our marine resources. We focus on strengthening public policy to protect our marine resources, and we believe that strong grassroots input and sound/scientific information are the key ingredients to making effective public policy.

² Earlier this year, the AOC convened a gathering of geographically diverse, regional environmental organizations with solid reputations for being highly effective. As a result of that meeting the National Coastal Caucus was formed. The purpose of the NCC is to build a strong and united voice of coastal experts, committed to the enactment of strong national coastal pollution legislation. Our first effort is focused on the need to strengthen the Ocean Water Act. The positions taken by the NCC are based on the experience and expertise of these groups who have implemented and enforced the Sea Water Act at the local level.

³ *Americans Report High Levels of Environmental Concern*, Activity Graham Hueber, The Gallup Poll News Service (April, 1990).

⁴ *Environmental Concern Still High after Rio Summit*, Christine Keilpinski, The Wirthlin Group and Susan Wysoki, Hill and Knowlton; the Wirthlin Report (July 1992).

its resources to the development of criteria addressing the chemical integrity of the nation's waters, primarily because wastewater management was treated as a public health concern. As a result, little attention has been paid to the physical and biological impairment of these waters.

EPA's focus on reduction of chemical inputs and concentrations in the nation's waters has resulted in considerable progress toward controlling and reducing specific types of chemical discharges. However, it is time for the CWA to explicitly address the restoration and protection of aquatic ecosystems, recognizing that the biological integrity of the nation's waters stands on equal footing with human health risk assessments. It is critical that water quality standards use biological criteria to protect water-dependent wildlife and ecosystem health.

"Aquatic ecosystems worldwide are being severely altered or destroyed at a rate greater than that at any other time in human history. . . ." ⁵ Protection of the functions of aquatic ecosystems such as pollution control, fisheries and wildlife support, floodwater storage and groundwater recharge have been largely ignored. Historically, resource management has been fragmentary in its approach and has focused on artificial boundaries (such as local, state, or country borders) when dealing with protection of our natural resources. This type of strategy focuses on specific programmatic issues with little consideration of the effectiveness of such actions on maintaining or improving the condition of the ecosystem as a whole. Often times, priority issues are defined by the availability of programs rather than by the specific need of the watershed in its entirety. We are pleased to see that this Committee has acknowledged the clear hydrological, ecological and economic basis for focusing on broader aquatic ecosystems management approaches, through its watershed planning provisions in Title III of S. 1114.

Watershed planning, however, is not a completely novel concept. Attempts have been made at the local, state, regional and federal level to do successful watershed planning for many years. Obviously, some of these efforts have been more effective than others. Created by Section 320 of the 1987 Clean Water Act, the National Estuary Program is an excellent example of a workable model for comprehensive aquatic ecosystem and watershed management. The early NEP incorporated the lessons learned in the Great Lakes and Chesapeake Bay Programs. Since then, the experiences gained by the first estuaries designated into the program—Puget Sound, Buzzards Bay and Narragansett Bay—have provided valuable lessons and serve as a model for the other Management Conferences as they develop and implement their CCMP's. As new information and technology are developed, the NEP will continue to evolve.

NATIONAL ESTUARY PROGRAM

Estuaries form transition zones between freshwater and marine ecosystems and, as a result are among the most productive natural systems. In these unique bodies of water, fresh water drains from the land and mixes with salt water from the sea. This valuable estuarine habitat is especially crucial to the early development of marine fisheries, shellfish, and birds. As a result, maintaining the health and viability of estuaries is critical to the biological life cycles both of marine organisms and wildlife.

Society also places a high value on estuarine areas as places for living, working, and recreating. However, the natural beauty and bounty of these ecosystems is partly the cause of their decline. People are drawn to their shores because of their unique qualities, yet, with people comes coastal development—housing, roads, business, industry, and cars—which threatens the existence of these valuable ecosystems. Today, estuaries are among the most densely populated areas—almost half of the entire U.S. population (about 110 million people) reside in coastal areas. ⁶ As a result, they are one of the nations' most highly stressed natural systems.

In spite of their high value, intense use and frequent overuse, estuaries only recently have been recognized as a unique and severely depleted resource requiring special attention. Congress determined that the problems confronting these estuaries were too complex to be adequately addressed by the traditional water pollution

⁵ *Restoration of Aquatic Ecosystems*, National Research Council (U.S.). Committee on Restoration of Aquatic Ecosystems—Science, Technology, and Public Policy; Water Science and Technology Board; Commission on Geosciences, Environment, and Resources. (November 1991). National Academy Press, Washington, D.C. 1992.

⁶ *50 Years of Population Change Along the Nation's Coasts*: Coastal Trends Series, Report No. 2. T.J. Colliton, M.A. Warren, T.R. Goodspeed, D.G. Reemer, C.M. Blackwell, and J.J. McDonough III. National Oceanic and Atmospheric Administration, Strategic Assessment Branch.

control programs. In response, they authorized the National Estuary Program (NEP) under Section 320 of the Water Quality Act of 1987.

The NEP is designed to identify estuaries of "national significance" and to establish a process for improving and protecting their water quality, habitat and living resources. To determine how to achieve these goals EPA is required to convene a Management Conference that has the responsibility for developing a Comprehensive Conservation and Management Plan (CCMP) within a five year time-frame. Participants in the Management Conference include representatives of the relevant federal, state and local government agencies and elected officials, industries, businesses, academic institutions, interest groups and citizens.

The CCMP is intended to address all uses affecting the restoration and maintenance of the chemical, physical, and biological integrity of each estuary. It includes many complex issues, such as habitat protection, polluted runoff controls, resource management and land-use planning, and will probably take decades to meet its challenge. However, the NEP has already taken important steps forward and is on the way toward meeting its goals. However, as it is currently structured, the NEP can only be expected to reach a limited level of success. The biggest obstacle to the success of the program lies in the fact that implementation of the plans is stymied by an inadequate federal financial commitment to the program.

The NEP has four tiers. *Tier I* was convened in 1985, 1986, and 1987 and includes the following six estuaries: Puget Sound, Buzzards Bay, Narragansett Bay, Long Island Sound, Albemarle-Pamlico Sounds, and the San Francisco Estuary. *Tier II* was convened in 1988 and includes New York-New Jersey Harbor Estuary, Delaware Inland Bays, Santa Monica Bay, Sarasota Bay, Galveston Bay, and Delaware Estuary. *Tier III* was convened in 1990 and includes Casco Bay, Massachusetts Bays, Indian river Lagoon, Tampa Bay, and Barataria-Terrebonne Estuarine Complex. In 1992, four estuaries were designated but will not be convened until their respective Conference agreements are signed. These estuaries, comprising *Tier IV*, include Corpus Christi Bay, Peconic Bay, San Juan Bay and Tillamook Bay.

Of these twenty-one estuaries, the Puget Sound Estuary Program, which was convened in 1985, was the first to have its Comprehensive Conservation and Management Plan approved by EPA. Last year, CCMPs from Buzzards Bay and Narragansett Bay were approved. Long Island Sound has submitted its draft final CCMP for public review and its final CCMP is expected in January, 1994.

PROBLEMS AND PROPOSED SOLUTIONS WITH THE NEP

For the past several years, AOC through the National Coastal Caucus (which is comprised of representatives of citizens organizations involved in their local estuary program), has been gathering comments on the strengths and weaknesses of the NEP. As a result of the combined efforts of each of these groups, we developed a list of priority problems and potential solutions necessary to strengthen the NEP. These suggestions essentially became the basis of Senator Lieberman's Water Pollution Control and Estuary Restoration Act, S. 815.

The organization's involved in the NCC have worked on developing and implementing the CCMPs from the following estuaries: Albemarle/Pamlico Sounds, North Carolina; Barataria-Terrebonne Estuarine Complex, Louisiana; Buzzards Bay, Massachusetts; Casco Bay, Maine; Chesapeake Bay, Maryland, Pennsylvania, and Virginia; Columbia River, Oregon; Delaware Estuary, Delaware, New Jersey, and Pennsylvania; Delaware Inland Bays, Delaware; Galveston Bay, Texas; Gulf of Mexico Program, Texas, Louisiana, Mississippi, Alabama, and Florida; Indian River Lagoon, Florida; Long Island Sound, Connecticut and New York; Massachusetts Bays, Massachusetts; Narragansett Bay, Rhode Island; New York-New Jersey Harbor Estuary, New York and New Jersey; Puget Sound, Washington State; San Francisco Estuary, California; Sarasota Bay, Florida; Santa Monica Bay, California; Tampa Bay, Florida.

Last July, these activists, representing millions of constituents in nineteen different states, met in Seattle, Washington near Puget Sound, to coordinate a national strategy to strengthen the National Estuary Program. In order to help in this effort and to build the necessary political will to encourage such changes, the participants of the estuary meeting reviewed and agreed to actively support the provisions of Senator Lieberman's (D-CT) bill, S. 815. These local and regional environmental activists from around the country said that if S. 815 was passed into law it would do much to preserve and restore our nation's estuaries, as well as to significantly improve the current program.

One of the points highlighted by the activists was that S. 815 recognizes that estuaries are a vital resource to which many regional economies are closely tied. The legislation acknowledges that investing in healthy estuaries is, in fact, investing in

jobs and a healthy economy. According to information provided in a March, 1992 study by Apogee Research, Inc., S. 815 would create 800,000 to 1.4 million new jobs during the seven year life of the bill in the construction industries and industries that support these workers. In addition to the NCC, another very broad based coalition has evolved in support of this bill, The Clean Water Jobs Coalition. Mr. John Atkin, who is sitting on one of the next panels of witnesses will highlight the strength of this coalition.

Clearly, a general consensus exists that the basic structure of the NEP is sound and worthy of whatever efforts necessary to improve the program. However, it is also clear that those involved in the program have experienced similar types of frustrations across the country, and therefore, are calling for a national solution to address these problems. We believe the solution can be found in S. 815 and we ask you to include it in the Committee's version of legislation to reauthorize the Clean Water Act.

Essentially there are five main areas in which section 320 of the Clean Water Act would be strengthened by incorporating the language of The Water Pollution Control and Estuary Restoration Act (S. 815). The Coastal Protection Act of 1993 (S. 1119) introduced by Majority Leader Mitchell (D-ME) and Senator Lautenberg (D-NJ) also provides some language which would strengthen the NEP, as does the Committee's bill, S. 1114. These provisions include:

[1] Mandating implementation of CCMPs. The NEP has done an excellent job of identifying the coastal pollution problems in each of these estuaries and in developing plans to address these problems. However, after the CCMPs are completed there is no firm requirement that the plan be implemented. EPA must be given the clear authorization to provide funding and other assistance for the implementation of CCMPs. Efficient use of the resources expended in developing the CCMPs necessitates federal support for implementing, monitoring and enforcing the plan. Otherwise, all of the time, energy and money spent on planning will result in a nice document that sits on a shelf collecting dust!

S. 815 moves the program from the identification phase to implementing the solutions to the problems by clarifying that implementation of CCMP's is a non-discretionary duty of E.P.A. In addition, federal financial assistance is provided to assist in this effort.

S. 1114 amends Section 320(g) by expanding the purposes of the grants to pay for research, surveys, studies, modeling, and other technical work necessary for the "implementation" (in addition to the development) of CCMPs. Section 101 of S. 1114 also specifically provides that implementation of an approved CCMP is an eligible project for funding through the State Revolving Loan Funds (SRF).

S. 1199 acknowledges the need for federal involvement in the implementation of CCMP's by extending the authority of, and funding for, Management Conferences to oversee implementation of approved plans.

[2] Incorporating strict time-frame guidelines into CCMP development and implementation. The five year time-frame allowed under section 320(e) should not be extended simply to allow the planning process to continue. With the appropriate guidance and leadership a very detailed and comprehensive plan can be developed within five years. Such a plan should also include financial forecasts, so as to assist States and the EPA in future budgeting decisions.

S. 815 sets forth scheduling deadlines to ensure a timely planning and implementation process and to discourage individual members of the Management Conference from stalling the entire process. Within the first year a total budget must be submitted to EPA outlining the expected costs for efficient development of the plan and implementation of early action plans. It also requires that a draft CCMP, identifying the major problems and setting priorities for early action, be developed within three years. In addition, it states that action plans are to be well coordinated with the activities of other agencies. If the Management Conference does not meet the scheduling guidelines, federal funding can be terminated.

S. 1199 also adds language to tighten up the planning process by requiring that implementation plans include a detailed financial plan indicating the anticipated Federal, State, and local funds needed to implement identified corrective actions. The bill also prohibits the EPA to award grants to programs that have not received EPA approval for a CCMP, or to programs that have failed to substantially implement their plans.

[3] Increasing the role and visibility of EPA in the program. The role of the EPA, as an active participant and as a coordinator of the program has not been consistent in each estuaries nor has its level of commitment to the NEP. In addition, there is a need for EPA to issue final NEP guidance outlining the mini-

mum federal standards and requirements necessary for CCMPs to be approved. Realizing that EPA continues to suffer extreme budget cuts, we are also working with the Administration and the Budget and Appropriations Committees to encourage that EPA be considered a priority when funding choices are made. Otherwise, the staff and resources necessary to ensure the success of this program may be not be available.

S. 815 requires EPA to assist Management Conferences in ensuring full coordination with the Governor's offices and state coastal zone management agencies for implementing the requirements under the CWA and the Coastal Zone Management Act. EPA is also directed to publish and promulgate guidelines setting out criteria for development, approval, and implementation of CCMPs. Generally, EPA is encouraged to take on a more aggressive leadership role in the program.

S. 1199 also highlights the need for increased participation by the EPA by revising its research and reporting requirements. Specifically, EPA is to review more closely and report on the monitoring and pollution abatement measures taken by, and the progress of, the Management Conferences.

[4] Strengthening citizen participation. Citizen participation during the development and implementation of the CCMPs is often inadequate. Part of the reason for this problem is the lack of funding necessary to make it feasible for the public to participate in a serious manner. To ensure successful implementation of CCMPs, plans must be endorsed by and must receive continuing commitment from the scientific community, the public, elected officials, and the government agencies responsible for its implementation.

S. 815 acknowledges that public involvement is a vital function of every Conference. It expands opportunities for public comment and participation in the development, approval, and implementation of management plans. Environmental organizations are specifically identified for participation as members of the estuary Management Conferences.

[5] Include a funding mechanism to ensure implementation of CCMPs. Due to state budget shortfalls and a lack of federal support, many states have been unable to fully implement their CCMPs. As each day passes, additional stresses and burdens on state treasuries require even the most essential projects to compete for less dollars. This trend is expected to continue, therefore, it is becoming increasingly unlikely that CCMPs will ever be implemented, monitored, and enforced if left solely as a state responsibility. It is imperative that access to additional resources be provided for implementation of the plans to be successful, otherwise the federal funds expended for crafting the plans will be wasted. Federal funds also provide an incentive for states to undertake the more politically difficult task of putting the elements of the plan into practice. Under current law, states are eligible to receive CCMP implementation funds under the SRF program, however, authorization and appropriation levels are severely inadequate to meet the growing demand for funding.

S. 815 provides for a funding mechanism to ensure that the states are given federal assistance for CCMP implementation. A small grant program is established for innovative projects and interim actions that are not ordinarily funded through the SRF in Title VI of the CWA. The bill also increases funding for the SRF program at \$4 and then \$5 billion and creates a set aside specifically for CCMP implementation.

BEACH CLOSURES AND ADVISORIES

As medical waste began to wash up on our coastlines during the summer of 1988, the many problems associated with coastal pollution came to forefront of the nations attention. The media focused on the threat that toxic chemicals and marine floatable debris pose to the nation, and reported on toxic red tides, sewage spills, dead dolphins, and fishing bans. Alarming accounts explained that unseen contamination from sewage spills and polluted runoff can contain high levels of pathogens posing health threats such as hepatitis and gastroenteritis. During this period, the New York and New Jersey tourism industries lost an estimated \$2 million as a result of beach closures.

The harm caused by coastal pollution extends beyond human illnesses contracted from body contact or ingestion of contaminated seafood; it also poses risks to marine species and the economy. Though it is difficult to calculate overall total economic losses, there are indications of wide impact. For example, the sport fishing industry, which generates billions of dollars for local economies, suffers significant losses from coastal pollution. One-third of the nation's remaining productive shellfish waters are closed on any given day because of pollution. Those same pollution sources cause swimmer illness, further depressing the economy through lost work days.

In June of this year, the Natural Resources Defense Council (NRDC) released a report which inventoried the beach protection programs in 22 coastal states.⁷ NRDC discovered that over 2,600 closings and advisories occurred at ocean and bay beaches in 1992 alone! Beach water standards, monitoring, and closure practices vary widely from state to state, and within states. Eight of the 22 coastal states surveyed in the report do no monitoring of coastal recreational water's for swimmer safety despite evidence of coastal pollution problems in those states and despite the sizable revenues generated by coastal tourism. In addition, five coastal states have limited monitoring programs which apply to only a portion of their coastlines or involve infrequent (once a year) monitoring.

Because coastal tourism generates billions of dollars annually, it makes good economic and environmental sense for states to provide public health protection for coastal recreational waters. Federal guidance is needed to discourage health officials from turning a blind eye from this pollution for fear that closed beaches will deter tourists. Instead, beach-goers should be aware that beach closings indicate responsible combined efforts to protect public health. In the long term, larger coastal pollution problems—of which beach closings are only a symptom—must be addressed and a comprehensive remedy must be found.

The Beaches Environmental Assessment, Closure and Health Act (B.E.A.C.H. Act), S. 997, proposed by Senator Lautenberg (D-NJ) is a significant first step in finding a comprehensive remedy to the pollution problems of our nation's beaches and coastal recreation waters. The bill ensures that states follow uniform beach testing procedures to protect public safety, avoid health risks, and improve the environmental quality of coastal recreation waters. Cleaning up existing sources of pollution, including polluted runoff, is clearly the best and the most important remedy to the problem of beach water contamination. In the interim, however, consistent programs to adequately protect beach-goer health must be set in place. S. 997 addresses some of the deficiencies in the current sporadic approach to beach protection and provides the following improvements:

- [1] The bill requires EPA to develop health-based coastal water quality criteria for pathogens within 18 months of enactment. The criteria is to be based on best available scientific information and short term increases of bacteria and viruses resulting from rainfall, malfunctions of wastewater treatment works, or other causes. After the criteria are published, states are given three years to adopt standards that at a minimum are consistent with EPA criteria.
- [2] Nine months after EPA publishes the water quality criteria, EPA is to publish regulations specifying minimum monitoring procedures for coastal recreation waters. The regulations shall specify: a) the frequency of such monitoring based on the periods of recreational use, b) the extent and degree of such use, and c) the proximity to pollution sources. In addition, the EPA will include specific methods for detecting short term increases of pathogens.
- [3] The bill establishes procedures for mandatory public notification of water quality standards violations. Recognizing the public has a right to know about the safety of its coastal recreational waters, the bill directs prompt communication of the violations to the appropriate local government agency and requires the state to post signs on beaches notifying the public of the violation and the potential health risks associated with body contact with such water.
- [4] The bill requires EPA to issue guidance on uniform assessment and monitoring of floatable materials and to specify the conditions when the presence of floatable debris constitutes a threat to the public health.
- [5] The bill authorizes EPA and the National Oceanic and Atmospheric Administration to conduct a joint study. The study's purpose will be to develop better indicators for directly detecting the presence of bacteria and viruses which are harmful to human health in coastal recreation waters.

We strongly support inclusion of the B.E.A.C.H. bill in the comprehensive Clean Water Act reauthorization. The bill authorizes federal involvement in developing minimum monitoring practices and in establishing mandatory public notification procedures. By incorporating S. 997 into the Clean Water Act, this committee will begin to address the public's concerns about beach and coastal pollution. Minimum standards applied in every state will provide beach-goers and enthusiasts of coastal water activities with the peace of mind that they can participate in their activities and be assured their health is not in jeopardy.

⁷ Chasis, Sarah, et al., *Testing the Waters III: Closings, Costs and Cleanup At U.S. Beaches*, Natural Resources Defense Council (June 1993). For copies, contact NRDC's New York office: 40 West 20th Street, New York, NY 10011.212-727-2700.

SUMMARY

Assuring the development of the most efficient plan for tackling pollution problems within estuaries of "national significance" is the major theme of S. 815, The Water Pollution Control and Estuary Restoration Act. Senator Lieberman is to be commended for his focus on the economic and environmental costs associated with cleaning up these valuable watersheds. We encourage the Committee to amend Section 607 of S. 1114 to incorporate the Lieberman bill in its reauthorization of the Clean Water Act and to proceed with confidence that the public solidly supports this legislation.

The Committee's version of The Federal Water Pollution Control Act, S. 1114 can easily be amended to address some of the concerns about the NEP. First of all, we strongly support the above mentioned provisions that recognize the need for assistance in implementing the CCMPs. Additionally, we recommend linking the National Estuary Program with the watershed provisions of the Committee's bill as set forth in Title I and Title III of S. 1114.

Title I of S. 1114 creates a new allotment for watershed management and planning under CWA Section 604. We would like to see this provision amended to include approved CCMPs under Section 320, in addition to watershed planning and management under Section 321.

Title III of S. 1114 creates a new Section 321 for Comprehensive Watershed Management. Section 321(c) establishes a Management Entity that is responsible for developing and implementing a plan for each watershed management unit. We believe that this section should be broadened to permit the Management Conferences established through the NEP to function as the management entity for implementing CCMPs and therefore, be eligible for assistance under Section 321(f). Additionally, Section 321(g) should include a mechanism for an approved CCMP to be approved on an expedited basis under the requirements for a comprehensive watershed management plan. Essentially, we recommend providing national estuaries with similar incentives and funding eligibility that are given watershed plans under Title III of the proposed bill.

As mentioned above, The Coastal Protection Act of 1993, S. 1199, introduced by Majority Leader Mitchell (D-ME) and Senator Lautenberg (D-NJ) also includes provisions that will strengthen the National Estuary Program. Other important provisions of S. 1199 include the creation of a coastal environment toxics release strategy focusing on the effect of industrial discharges into marine waters, and the development of a national marine water quality education program. The bill significantly strengthens the requirements and enforcement provisions of section 312 for marine sanitation devices. It also calls for the development marine water quality criteria and standards and significantly restricts ocean discharges. Finally, it authorizes the Army Corp of Engineers to assist in the construction of facilities for the control of overflows from combined storm and sanitary sewers into marine waters.

Unfortunately, due to time constraints, we have been unable to fully analyze S. 1199. We are in process of gathering comments and will submit them to the Committee as soon as possible. Until I discuss the other provisions of the bill our activists and estuary coordinators, I hesitate to extend further comments on S. 1199.

CONCLUSION

This concludes our testimony. I hope we have assisted this Committee in its challenging task of reauthorizing the Clean Water Act. The citizens of this country are seeking a comprehensive approach to preventing pollution of our nation's estuaries, coastal waters and beaches. The proposed legislation I have discussed today will meet the public's desires. We encourage you to do all that is within your power to assure that these bills are included in the reauthorized Clean Water Act. Thank you once again for soliciting our views on this important issue. We appreciate the Committee's attention to the issues of coastal pollution.

April 14, 1993

CO-SPONSORS REQUESTED FOR STRENGTHENING CLEAN WATER ACT

Dear Senator,

The undersigned organizations urge you to co-sponsor and support the Water Pollution Control and Estuary Restoration Financing Act. to be introduced by Senator's Lieberman (D-CT) and Dodd (D-CT) by the end of April. This legislation strengthens the Clean Water Act (CWA) in several important ways. In particular, it will help clean up our nation's water resources by significantly increasing federal aid to states for upgrading sewage treatment plants, controlling polluted runoff, and fixing

combined sewer-overflows. In addition, it reauthorizes Section 320—the National Estuary Program, requires implementation of EPA approved Comprehensive Conservation and Management Plans (CCMP), and ensures full coordination of efforts taken to carry out other requirements of the CWA and Coastal Zone Management Act. The bill also targets State Revolving Loan Funds (SRF) for economically and environmentally efficient implementation of estuary management plans.

The protection of estuaries of “national significance” and other precious national resources is a top legislative priority for citizens around the country, as well as for the local economies that depend upon them for long-term economic growth. *Currently, many states and municipalities possess neither the infrastructure nor the financial resources to stop the ongoing destruction of these estuaries, therefore, it is essential that federal legislation such as this be supported.*

It is our belief that the present statutory and regulatory structure of the National Estuary Program does not adequately deal with the complexities of the problems faced by these valuable watersheds. As a result, we have worked closely with Congressional staff to ensure that this bill significantly strengthens Section 320 of the Clean Water Act and provides adequate financial resources for implementation of comprehensive management plans. *We believe that support for this legislation provides a proper balance of environmental and economic incentives to improve current law, to protect these estuaries from further destruction, and ultimately, to improve the health and quality of these watersheds.*

This bill is designed to implement estuary protection and cleanup in such a way as to create jobs and foster economic growth through commitment to a strong federal-state-local partnership. Specifically, the legislation would create a set-aside of additional funds in the SRF program to assist states in implementing approved CCMP's. Such planning is essential to assure that management programs achieve their goals and are economically feasible, before unnecessary resources are expended. This SRF set-aside will provide funds to local economies while achieving the dual purpose of protecting the integrity of their estuaries, and creating the necessary economic base essential for continued economic resiliency. *According to a March 1992 study by Apogee Research, Inc. this legislation would create 800,000 to 1.4 million new jobs over the seven year life of the bill in the construction industries and industries that support these workers.*

By becoming a co-sponsor of this important legislation you will help to lay the groundwork for addressing this issue in the reauthorization of the Clean Water Act, and ensure that our estuaries and communities thrive for generations to come. Thank you for your consideration of this legislation. Please feel free to contact us if we can be of any assistance.

Sincerely,

Dr. Robert Gray, President, Water Quality Section, American Fisheries Society; Paul Kemp, Science & Technology Director, Coalition to Restore Coastal Louisiana; Dery Bennett, Executive Director, American Littoral Society; Beth Millemann, Executive Director, Coast Alliance; Dawn M. Martin, Issues Director, American Oceans Campaign; Eugenia Laychak, Policy Director, Coastal Resources Center; Connie B. Cooper, AICP, President, American Placing Association; Peter Shelley, Senior Attorney, The Conservation Law Foundation of New England; Ann Powers, Vice President & General Counsel, Chesapeake Bay Foundation; Cynthia Poten, Riverkeeper, Delaware Riverkeeper; Mimi McConnell, Executive Director, Coalition for Buzzards Bay; Peter DeFur, Senior Scientist, Environmental Defense Fund; Lisa Kahn, Policy Associate, Friends of the Earth; Nina Bell, Executive Director, Northwest Environmental Advocates; Linda Shead, Executive Director, Galveston Bay Foundation; Naki Stevens, Policy Director, People for Puget Sound; Roger Gorke, Research Scientist, Heal the Bay; Tom Putnam, President, Puget Sound Alliance; David Gordon, Staff Attorney, Hudson Riverkeeper Fund; Peter Lavigne, Director of River Leadership Program, River Network; Larry Bock, Public Outreach Coordinator, Long Island Sound Taskforce; Ruth Gravanis Campaign Director, Save San Francisco Bay Association; Terry Backer, Soundkeeper, Long Island Soundkeeper Fund; Curt Spalding, Executive Director, Save The Bay; David Miller, Vice President, N.E. Regional Office, National Audubon Society; Beth Nicholson, Chairperson, Save The Harbor/Save The Bay; Clark Williams, Wetlands Specialist, National Audubon Society; Matilda Pernell, Executive Director, Save Wetlands And Bays; Stephanie Grogan, Counsel, Environmental Quality Division, National Wildlife Federation; Derb Carter, Staff Attorney, Southern Environmental Law Center; Robert W. Adler, Senior Attorney, Natural Resources Defense Council; Steve Moyer, Director of Government Affairs, Trout Unlimited; Andrew Willner, Baykeeper, New York-New

Jersey Harbor; Carolyn Hartman, Staff Attorney, U.S. Public Interest Research Group; Todd Miller, Executive Director, North Carolina Coastal Federation

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July 13, 1993

Dear Senator,

The undersigned organizations urge you to co-sponsor and support S. 997, the Beaches Environmental Assessment, Closure, and Health Act of 1993. The focus of the B.E.A.C.H bill is to ensure that States have adequate beach testing programs, to protect citizens from health risks, while allowing states flexibility in determining beach closures or in implementing stricter standards.

Current data indicate that the problem of sewage contamination and polluted runoff of our coastal waters, and its associated health risks, are persistent. There have been thousands of ocean and bay beach closings or advisories issued during in the past few years, due to elevated bacteria levels attributable primarily to human and animal waste. Cleaning up existing sources of pollution, including polluted runoff, is clearly the best and the most important remedy to the problem of beach water contamination. In the interim, however, consistent programs to adequately protect beachgoer health must be set in place.

Recent surveys of federal and state practices have shown that:

- current Environmental Protection Agency (EPA) recommended standards allow 19 out of every 1000 swimmers to contract illnesses such as gastroenteritis and even hepatitis;
- States use different standards of varying efficacy to judge the safety of coastal recreational waters;
- many states do little or no monitoring of their beach water despite evidence of local coastal pollution problems as well as heavy beach attendance; and
- government agencies often fail to provide the public with timely notification of potential health risks even when monitoring shows that standards have been exceeded.

The B.E.A.C.H. bill requires EPA to develop health-based water quality criteria to protect beachgoers and to issue regulations on procedures to monitor coastal recreation waters based on: (1) how frequently a beach is used, (2) proximity of pollution sources, and (3) short term increases of bacteria and viruses resulting from rainfall, malfunctions of wastewater treatment works, or other causes. The States then have 3 years to promulgate their own health-based standards or adopt EPA's minimum

criteria. States are also required to post signs on beaches notifying the public of potential health risks when water quality does not comply with State coastal recreation water standards. Additionally, the bill requires EPA to develop guidance on uniform assessment and monitoring of marine debris.

We believe that it is in the best interest of the country to have a comprehensive and effective national program to protect beachgoers from potential health risks of contact with polluted waters. In addition, the economic impacts of polluted beaches must be considered, as tourists spend billions of dollars annually visiting coastal counties and their ocean and bay beaches. The protection of beachgoers through cleanup of polluted waters and effective monitoring is well worth the investment.

By becoming a co-sponsor of this important legislation you would help to install nationally consistent standards, monitoring criteria, and closure notification requirements that would protect beachgoers everywhere while ensuring that no state is at a disadvantage for taking effective action. Thank you for your consideration of this legislation. Please feel free to contact us if we can be of any assistance.

Sincerely yours,

Robert Sulnick, Executive Director, American Oceans Campaign, Santa Monica, California; Gary Magnuson, Vice President for Program, Center for Marine Conservation, Washington, DC; Dawn M. Martin, Issues Director, American Oceans Campaign, Washington, DC; Ann Powers, Vice President and General Counsel, Chesapeake Bay Foundation, Annapolis, Maryland; Fred Felleman, Director of Northwest Office, American Oceans Campaign, Seattle, Washington; Mimi McConnell, Executive Director, Coalition for Buzzards Bay, Buzzards Bay, Massachusetts; Dale Shecker, Editor, California Diving News, Torrance, California; Mark Davis, Executive Director, Coalition to Restore Coastal Louisiana, Baton Rouge, Louisiana; Beth Millemann, Executive Director, Coast Alliance, Washington, DC; Lynn Nettles, Editor, Florida Scuba News, Jacksonville, Florida; Peter Shelley, Senior Attorney, Conservation Law Foundation, Boston, Massachusetts; Joe Payne, Casco BayKeeper, Friends of Casco Bay, South Portland, Maine; Cynthia Poten, Delaware Riverkeeper, Delaware River Network, Lambertville, New Jersey; Velma Smith, Director of Domestic Policy, Friends of the Earth, Washington, DC; Cheri Boone, Publisher, Dive Boat Calendar and Travel Guide, Huntington Beach, California; Linda Shead, Executive Director, Galveston Bay Foundation, Webster, Texas; Scott Jones, Vice President, Dive 'n' Surf, Redondo Beach, California; Adi Lieberman, Executive Director, Heal the Bay, Santa Monica, California; Kimberly Woods, President, D.I.V.E.R.S., Fountain Valley, California; Jeff Bertsch, President, Inner Frontier, Durham, North Carolina; Jim Prusa, Executive Director, Diving Equipment Manufacturers Association, Huntington Beach, California; Nancy Seligson, President, Long Island Sound Task Force, Stamford, Connecticut; Kathy Phillips, Executive Director, Eastern Surfing Association, Ocean City, Maryland; Terry Backer, Executive Director, Long Island Soundkeeper Fund, East Norwalk, Connecticut; David Dickson, Senior Analyst, Environmental Working Group, Washington, DC; Gloria Rains, Executive Director, Manasota 88, Palmetto, Florida; Sarah Chasis, Senior Attorney, Natural Resources Defense Council, New York, New York; Curt Spalding, Executive Director, Save the Bay, Providence, Rhode Island; Sam Jackson, Executive Director, National Association of Underwater, Instructors, Montclair, California; Beth Nicholson, Chairperson, Save the Harbor/Save the Bay, Boston, Massachusetts; Todd Miller, Executive Director, North Carolina Coastal Federation, Swansboro, North Carolina; Barry Nelson, Executive Director, Save San Francisco Bay Association, Oakland, California; Nina Bell, Executive Director, Northwest Environmental Advocates, Portland, Oregon; Matilda Pernell, Executive Director, Save Wetlands and Bays, Millsboro, Delaware; Dick Bonin, Executive Director, Ocean Futures, Huntington Beach, California; Derb Carter, Attorney, Southern Environmental Law Center, Chapel Hill, North Carolina; Kris McDivitt, Chief Executive Officer, Patagonia, Inc., Ventura, California; Sam Allen, Chief Executive Officer, Sport Chalet, Inc., LaCanada, California; Kathy Fletcher, Executive Director, People for Puget Sound, Seattle, Washington; Tom O'Neill, Trustee, Surfrider Foundation, National, San Clemente, California; Peter Lavigne, Director of Leadership Program, River Network, Portland, Oregon; Mark Harris, Chair, Humbolt Chapter, Surfrider Foundation, Humbolt, California; Vicki Nichols, Executive Director, Save Our Shores, Santa Cruz, California; Bill Soskins, Chair, Monterey Chapter, Surfrider Foundation, Monterey, California; Bill McLaughlin, Chair, San Francisco Chapter, Surfrider Foundation, San Francisco, California; Mark Halvorsen, Chair, Ventura Chapter, Surfrider Foundation, Ventura, California; Neil McQueen, Chair, Santa Cruz Chapter, Surfrider Foundation, Santa Cruz, California; Ken Newfield, Chair, Northshore Chapter, Surfrider Foundation, Haleiwa, Hawaii; Tex Haines, Chair, Laguna Beach Chapter, Surfrider

Foundation, Laguna Beach, California; Marilyn Spitz, Chair, Delaware Chapter, Surfrider Foundation, Rehoboth Beach, Delaware; Jeff Schfaegel, Chair, Long Beach Chapter, Surfrider Foundation, Long Beach, California; Debbie Sease, Legislative Director, Sierra Club, Washington, DC; Nancy Gardener, Chair, Newport Beach Chapter, Surfrider Foundation, Newport Beach, California; Greg Pollack, Chair, New Jersey Chapter, Surfrider Foundation, Tinton Falls, New Jersey; Scott Dittrich, Chair, Malibu Chapter, Surfrider Foundation, Malibu, California; Kevin Dubola, Chair, New York Chapter, Surfrider Foundation, St. James, New York; Betty Steel, Chair, San Diego Chapter, Surfrider Foundation, San Diego, California; Brant Wise, Chair, Outer Banks Chapter, Surfrider Foundation, Kill Devil Hills, North Carolina; Dave Marshall, Chair, Santa Monica Chapter, Surfrider Foundation, Santa Monica, California; Randy Harris, Chair, Virginia Beach Chapter, Surfrider Foundation, Virginia Beach, Virginia; Mike Allen, Chair, Santa Barbara Chapter, Surfrider Foundation, Santa Barbara, California; Alan Gregg, Chair, South Florida Chapter, Surfrider Foundation, Miami, Florida; Mike Mantell, Chair, Houston Organizing Committee, Surfrider Foundation, League City, Texas; Valerie McCane, Chair, Galveston Organizing Committee, Surfrider Foundation, Lake Jackson, Texas; Dave Pekozi, Chair, Rhode Island Organizing Committee, Surfrider Foundation, Newport, Rhode Island; Carolyn Hartman, Staff Attorney, U.S. Public Interest Group, Washington, DC; Don Larson, President, Washington Scuba Alliance, Olympia, Washington; Jennifer King, President, Women's Scuba Association, Blue Jay, California



AMERICAN OCEANS CAMPAIGN

Mr. Bill Leary
Committee on Environment and Public Works
SH-505 Hart Senate Office Building
Washington, D.C. 20510

22 November 1993

Dear Mr. Leary:

Pursuant to Senator Graham's letter of request mailed to me on October 12, 1993, the following information is intended to respond to questions for the August 4, 1993 hearing record as posed by Senator Lautenberg. I apologize for the delay in preparing these responses.

1. Can American families feel secure in knowing that when they vacation in one of our coastal states the beach water that their children swim in will not make them sick? Why?

No, American families cannot feel secure in knowing that when they vacation in one of our coastal states the beach water that their children swim in will not make them sick. The Environmental Protection Agency does not mandate minimum testing procedures or nationwide bacteria standards for recreational waters. Left to their own volition, states monitor with less than optimal frequency. Eight states do not monitor their coastal waters for swimmer safety. Five coastal states have limited testing programs. In addition, there are no federal requirements for public notification and beach closures when the bacteria level violates water quality standards. The lack of national requirements for public notification, bacteria standards, and testing procedures prevents parents from receiving information that could be used to protect their families while using our recreational waters. Until there are uniform standards, monitoring and closure practices, families will be unsure whether they are being adequately protected when swimming at beaches in different parts of the country.

2. What are the main reasons that beaches sometimes need to be closed, and what are the health consequences when people swim in beach waters that should be closed?

The overwhelming majority of beach closings and advisories are caused by high levels of bacteria in coastal waters. The major causes of high bacteria levels in beach water are: inadequate and overloaded sewage treatment plants, raw sewage discharges from combined or sanitary sewers, polluted stormwater runoff, faulty septic systems, and boating wastes.

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When people swim in beach waters that should be closed, they risk contracting several diseases. The wide range of diseases that can be carried by bacteria in sewage-contaminated waters include gastroenteritis, dysentery, hepatitis, salmonellosis, shigellosis, and infection caused by *E. coli*. A swimmer afflicted with gastroenteritis will exhibit one or more of the following symptoms: vomiting, diarrhea, stomachache, nausea, headache, and fever. Amoeba and protozoa are also found in coastal waters and can cause giardiasis, amoebic dysentery, skin rashes, and "pink eye." These diseases are not life-threatening for most persons but are discomforting and occasionally lead to lost working days. The consequences of contracting swimming-associated illnesses can be greater for children, elderly people, and others with weaker immune systems.

3. Because EPA has not mandated that states adopt minimum standards for monitoring beach waters, there is great inconsistency in standards used among--and even within--states. Do you perceive this as a problem? Why?

Yes, the inconsistent standards used by coastal states to monitor beach waters is a significant problem. Swimmers and beachgoers cannot be truly assured the coastal water they use is safe until minimum standards are adopted nationwide. Frequently, beach water with comparable water quality transcends two jurisdictions. The jurisdictions that do not monitor and post water quality violations or have less stringent standards provide a beachgoer with a false sense of security.

4. What is the cost burden to states that would need to comply with S. 997? Can you discuss this in context of any benefits that those same states would derive?

Coastal states would derive substantial benefits if our nation took the initiative to clean up coastal waters. The primary benefit of cleaning up coastal waters would be improved health protection for beachgoers nationwide. Another benefit would be increased revenue from tourism and recreation. Currently, over one-hundred and sixty million individuals visit bay and ocean beaches each year, generating billions of dollars for the local tourist industries. According to the Florida Department of Natural Resources, coastal tourism was responsible for generating \$12 billion of income in 1992. Coastal tourism generated over \$9 billion in New Jersey in 1992. Jobs that are dependent on coastal recreation and tourism would be saved if coastal waters were cleaned up and tourists felt confident that they would be notified if waters were unsafe for recreational use. Tourists would be likely to return to beaches where local officials were straightforward concerning their health. Finally, recreational water sport users are more likely to invest in their activities and equipment and spend their time where they feel safe from pollution-borne diseases.

The costs associated with cleaning up the coastal waters saves money in the long run because we are preserving a valuable economic and environmental resource. The cost of the monitoring program is reasonable when one considers that states do not have to include every mile of beach and are not required to monitor every area to the same

degree. The Natural Resources Defense Council recently published a comprehensive study of monitoring costs of existing beach protection programs. NRDC discovered that, in 1992, the annual monitoring cost per beach mile ranged from \$541 to \$7500. New Jersey monitored 127 miles of beach at a cost of \$1,575 per mile. Orange, Los Angeles, and Santa Cruz Counties in California spent an average of \$2,683 per mile to monitor 164 miles of beach. Considering the local and state revenues generated from cleaner water, any investment in water pollution clean up is worthwhile.

5. What is your opinion of the exemption contained in the BEACH bill which allows some beaches not to be tested? What are some of the conditions where an EPA exemption from the monitoring standards would be appropriate?

We do not support the exemption contained in the BEACH bill which allows some "discrete areas of coastal recreational waters" not to be tested. Water pollution does not confine itself to specific boundaries; there is always a risk that pollution will infiltrate popular beach areas. As the monitoring program is designed, every mile of beach water does not have to be periodically tested. We should not encourage a potentially unfavorable and ambiguous loophole by exempting some "discrete" areas that should be monitored routinely.

Some beach areas are clearly not frequented by swimmers as often as others, however, EPA already has the discretion to develop monitoring standards that allows for flexibility in the monitoring regimes. Such an "exemption"--or less rigorous monitoring programs--should be left for EPA to determine as it develops coastal water monitoring standards. This approach is more preferable than including a potentially ambiguous loophole in statutory language.

Thank you for the opportunity to respond to Senator Lautenberg's questions.

Sincerely,



Dawn M. Martin
Director, Washington D.C. Office

STATEMENT BY RICHARD E. WEDEPOHL, NORTH AMERICAN LAKE
MANAGEMENT SOCIETY, MADISON, WISCONSIN

My name is Richard E. Wedepohl and I am a past president of the North American Lake Management Society (NALMS). I presently serve as Chair of NALMS Government Affairs Committee and am the State of Wisconsin's Lake Management Coordinator. Recently I have also served as Chair of Water Quality 2000's Urban and Rural Runoff Challenge Team which focused on defining solutions to our nation's water quality problems which originate from rural and urban runoff. NALMS, the organization I am representing today, is an international organization of citizens, scientists, lake associations and water pollution control professionals who are deeply concerned about the water quality in our nations lakes, ponds and reservoirs. Although relatively young, NALMS has members in every state, Canada and several other countries throughout the world, along with chapters in almost half of our nation's states. The Society's strong and diverse membership is in itself testimony to the abiding and lasting concern about the present and future condition of our nation's lakes. I am here today on behalf of our Society to offer to this Subcommittee testimony relative to S. 1198, the "Lakes Assessment and Protection Act of 1993" recently introduced by the Honorable Senator George Mitchell, and S. 1114, the Water Pollution Prevention and Control Act of 1993.

Let me begin by stating, as strongly as possible, our support for S. 1198, Senator Mitchell's Lake Assessment and Protection Act. This is, without a doubt, the finest piece of legislation our organization has had opportunity to comment on. Our compliments to Senator Mitchell and the staff who have worked hard over the past three years to put this piece of legislation together. S. 1198 has many fine provisions which build upon the 17 years of experiences and lessons learned from the highly successful Section 314 Clean Lakes Program, most of which focused on watershed protection and control of nonpoint sources of pollution. Although our nation's lakes would benefit if S. 1198 were adopted independently, it would be our preference to see it enrolled, in its entirety, into the Clean Water Act Amendments. By so doing, it is our belief that the many strengths of this piece of legislation would spill over into other, much newer, nonpoint source and watershed initiatives, strengthening the act in total.

WHY SPECIAL EMPHASIS ON MANAGING AND RESTORING LAKES AND RESERVOIRS?

Your committee has heard many times the facts and figures on the quality of our nation's water resources and how critical it is for us to get on with addressing nonpoint source pollution. Additionally you have heard a great deal about the importance of managing water resources by using a watershed approach and you have heard about the importance of involving individuals and local communities if we are to meet our water quality objects. We add our support to these. What has not been stated, very well, is the critical need to focus our nonpoint source and watershed based control efforts to help solve the lake degradation which continues to occur.

Lakes are without a doubt a major water resource of our nation. Freshwater inland lakes and reservoirs provide our nation with 70% of its drinking water. They supply water for industry, irrigation, and hydropower. Their ecosystems provide the habitat needed to support large numbers of endangered and threatened species. Lakes are the cornerstone of our nation's \$19 billion dollar freshwater fishing industry. Freshwater inland lakes and reservoirs form the backbone of numerous state's tourism industries. They provide countless numbers of recreational opportunities whether it be for swimming, fishing, boating, or purely aesthetic enjoyment. In Minnesota alone, riparian areas around lakes are valued at \$10 billion with lakes supporting the bulk of the state's \$5 billion tourism industry.

Lakes are a way of life in this country, but sadly their quality has long been neglected. Over 50% of all classified lakes and reservoirs are of poor or very poor quality. Many more are threatened and since 1986 there has been a 40% decline in the percentage of assessed lakes and reservoirs which are meeting their designated uses. Although great strides have been made in cleaning up our streams and rivers, which have been dominated by point sources of pollution, relatively little progress has been made in improving the quality of our nonpoint source dominated lakes.

THE STRENGTHS OF S. 1198

The success of the Section 314 Clean Lakes Program has never been questioned. The program model was based on sound science, was driven by needs identified at the grass roots level, and has been implemented with the principle of the need to build strong state/local partnerships to solve watershed level problems. Recently

the National Research Council's Committee on Restoration of Aquatic Ecosystems described the Clean Lakes Program as "a model of federal restoration efforts, especially with regard to its emphasis on causes of lake problems and on local and state participation". A 1993 EPA review of the program highlighted its many successes. Former head of the EPA's Office of Water, Lajuana Wilcher, in 1991 described the Clean Lakes Program as "the quintessential example of empowering citizens to work closely with their local, State and Federal governments in achieving common goals". Finally, this was all accomplished with a program that has had little to no budget support from EPA, operating with an average annual appropriation of less than \$10 million per year. Senator Mitchell's Lake Assessment and Protection Act of 1993 revises and strengthens elements of the Section 314 Clean Lakes Program. Additionally it builds upon the experiences of that program by correcting weaknesses learned over the 17 years of the program's existence. Specifically:

- Section 3 of the bill provides a well conceived approach to get practical research done at all levels. It recognizes the special sensitivity of lakes and the need to develop interdisciplinary solutions.
- Section 4 directs EPA to develop lake specific water quality criteria, an issue our organization has been very actively pursuing for the past 6 years. Without criteria, and the establishment of standards, setting pollution controls is problematic, if not impossible. While the Act's four year timeline is very aggressive, it is achievable, at least for the more proactive states. Quite rightly it also offers sufficient latitude and flexibility to the states to allow for regional differences.
- Section 5 is the core of S. 1198. It provides program support to the states, supports local initiatives to assess pollution sources and develop corrective responses, and provides support for implementation of the control plan. This section recognizes that even if all sources of pollution are stopped, lake water quality response will be slow. Once degraded, lakes recover very slowly, retaining 90% or more of the pollutants added to them. This act recognizes that although future nonpoint source initiatives may protect lakes and reservoirs, they cannot restore them and may not improve them. Additionally this section will lead to many more states utilizing the Section 314 model to develop their own programs. This section helps take the new lakes initiatives of many states beyond the strictly case by case scenario, allowing them to develop more comprehensive protection initiatives which will affect large numbers of lakes within each state. This is a major strength of the act.
- State revolving loan fund eligibility is a logical addition.
- A national ban on phosphorus in detergents is an issue which should have been addressed long ago. So many individual states have already adopted their own phosphate detergent bans that many manufacturers no longer use phosphorus as a detergent builder because of distribution problems. Consequences of the ban in those states where it has already been adopted have been virtually non-existent. This is pollution prevention at its best. There is absolutely no reason not to extend the ban to the national level.
- Section 9 directs agricultural programs to provide priority consideration to watersheds of impaired lakes. Given the financial magnitude of agricultural incentive programs their use can provide tremendous benefits if targeted to sensitive lakes. It is very important that EPA and USDA coordinate their efforts. The water quality benefits to lakes provided by this section may very well exceed any of the others. We do, however, recommend that language be added to make threatened lakes be eligible as well as those already impaired. Prevention is far more cost-effective than is correction.
- Education, Section 10. This section is absolutely essential if we are to make long term progress. It thoughtfully allows those states which wish to take the lead to do so, while providing a backup for those citizens who want to participate but do not have an active state program. Citizens have demonstrated again and again their willingness to volunteer to help solve lake problems. Their value cannot be discounted. We would strongly recommend that funding, in the order of \$5 to \$6 million, be provided to support this initiative. Without a strong state-level coordination effort along with resources for monitoring equipment, training, etc., the vast potential of these volunteer programs will be under-utilized. The citizens who participate in these programs will be the same ones who'll be there help make the watershed and nonpoint source elements of S. 1114 work at the local level.
- Section 11 recognizes the need to control specific exotic species. The approach provided is a logical one.

Overall, S. 1198 is an extremely well conceived and developed bill. It has few flaws and is a logical extension of the section 314 program. However, given the low

funding levels provided by this bill, it is essential that lake water quality problems are also given special attention in the new watershed and nonpoint source initiatives of S. 1114 and other related bills. Indeed, if the special needs of lakes are not recognized and incorporated into this act, the success of the new watershed and nonpoint initiatives will be very much threatened.

THE WATER POLLUTION PREVENTION AND CONTROL ACT OF 1993

Generally NALMS is supportive of S. 1114. The act recognizes the importance of assessing problems and developing solutions using the watershed approach, it provides more emphasis on controlling nonpoint sources of pollution and it begins to recognize the key role volunteers, individual citizens and local communities must play if nonpoint sources of pollution are to be dealt with. While we have the general sense that this bill is still more top-down than bottom-up in design, and that little emphasis was placed on the need to develop state and local infrastructure, some of this weakness would be corrected if the citizen initiated clean lakes projects proposed with S. 1198 could be effectively incorporated and integrated into the watershed and nonpoint sections of S. 1114. As stated earlier, the state/local partnership structure and model for effective, voluntary, local watershed management has already evolved through the clean lakes program and incorporation of these principles into these newer initiatives would greatly increase the chances for S. 1114 to be ultimately effective.

A key language weakness of this bill, which we trust was not of general intent, is the emphasis on the clean-up of impaired watersheds. Although there are sections related to protection and prevention actions, they are buried and often left to the discretion of the administrator or the states. Protection of our many still high quality resources is the most cost-effective actions we could take. For example, throughout the act, "threatened waters" should be added wherever "impaired waters" are mentioned and "protection and maintenance" emphasis added as appropriate elsewhere.

Along this same prevention vein, NALMS is very concerned that there still exists little incentive for state or local programs to address control of post-development stormwater runoff under section 402(p). Presently EPA and state implementation of the stormwater permitting program does not effectively deal with control of post-development runoff from new developments. As the program is now being implemented any new construction activities greater than 5 acres in size must control runoff during construction. Post-development controls are not required. EPA in its guidance, only requires that if post-development controls are to be used they must be described. There are absolutely no requirements that control of post-development runoff be seriously addressed. To correct this major deficiency we propose that a new section be added to this act which would focus specifically on controlling runoff from new developments. The section should require that the appropriate regulatory authority institute any zoning or other regulatory provisions necessary to prevent post development runoff problems. Permittees should be required to show that all new development will incorporate post-development runoff control practices. State level requirements should be flexible and variances should be allowed to accommodate regional needs. The issue here is that states and local regulatory authorities need to become serious about addressing this problem. The time has past when we can willy-nilly pave all the land around our sensitive lake resources, assuming their pollutant assimilative capacity is endless.

We sincerely appreciate the courtesy and consideration extended to us. Thank you.

TESTIMONY OF GEORGE A. BRINSKO, PRESIDENT, WESTERN COALITION OF ARID STATES, TUCSON, ARIZONA

INTRODUCTION

Good Morning Mr. Chairman, and members of the Subcommittee. My name is George Brinsko. I am President of the Western Coalition of Arid States, otherwise known as WESTCAS. I am also the Director of the Wastewater Management Department in Pima County, Arizona.

WESTCAS has requested the opportunity to testify before your Subcommittee in order to inject an arid West perspective into these discussions on the Clean Water Act Reauthorization. Our concerns about this Reauthorization are that the issues of the arid West are missing, on both a conceptual and implementation level. Our testimony will focus on (1) a description of continuing arid West problems with the Clean Water Act, (2) the concepts needed to include arid West concerns in the Reau-

thorization, (3) our proposals for change in the language of the Act and (4) the need for research projects and programs for arid West ecosystems to be instituted under the Reauthorization.

WESTCAS

Before I begin on these themes, however, I believe it would be helpful to the Subcommittee if I gave you a little background on WESTCAS. The Western Coalition of Arid States was formed in 1992 by a group of Western water and wastewater agencies concerned about the manner in which water quality and water resource management issues were being addressed in states throughout the arid West—defined as areas with less than 15 inches of annual rainfall.

In the last eighteen months, WESTCAS has attracted more than 50 members from five Western states: Arizona, California, Colorado, New Mexico and Nevada. Representatives from agencies in several other Western states have consistently participated in our quarterly meetings and we have every reason to believe that they too will be joining us in the near term.

WESTCAS's main objective is to assist in the development of water quality regulations, policies and laws which promote the protection of arid and semi-arid ecosystems throughout the West. With that in mind, WESTCAS has developed proposals for specific changes in the Clean Water Act Reauthorization that would protect those species which actually exist in arid ecosystems. For example, we are committed to a policy that the quality of our effluent should protect "what is there;" but we oppose policies that require us to adopt extremely expensive measures to protect aquatic species which may not even exist in arid and semi-arid ecosystems.

IMPLEMENTATION OF THE CLEAN WATER ACT IN THE ARID WEST

Prior to my move to Arizona, I served 22 years as General Superintendent of Operations for the Allegheny County Sanitary Authority in Pittsburgh, Pennsylvania, and also as President of the Pennsylvania Water Pollution Control Association. In Pennsylvania, "a river is a river," in every sense of the word. By that I mean that it actually has water flowing in it twelve months a year. Under those circumstances, the quality of the receiving water becomes extremely important in determining the level of treatment to apply to effluent to meet the Environmental Protection Agency's (EPA) National Pollutant Discharge Elimination System (NPDES) permit requirements.

But, 14 years ago, I was introduced to a completely new set of circumstances and challenges when I moved to Pima County in southern Arizona. Pima County is located in the heart of the Sonoran desert, an "arid ecosystem." The environment in southern Arizona is typical of the arid and semi-arid ecosystems found throughout 17 of our Western states.

I moved to Pima County to establish the first regional wastewater treatment system in Arizona. One of my first and most vivid experiences, upon my arrival, was standing beside the Santa Cruz River—a river with no water. The river had begun as a dry wash, commonly known in the west by its Spanish name, arroyo. Exhibit 1 depicts an example of what I saw on that memorable day.

Now to someone who has been raised in the eastern United States, a river without water would seem to be a bit of a contradiction. But that is not the case in my new homeland. The arid West is laced with arroyos and dry rivers such as the Santa Cruz; they are actually ephemeral streams. Ephemeral streams have streambeds that are, at all times, above the water table. These streambeds are created over time by periodic powerful rainstorms whose runoff cuts through the desert floor. Ephemeral streams only flow in direct response to one of these storms. Exhibit 2 depicts the Santa Cruz River experiencing one of these rainstorms, or monsoons, as they are commonly known in the Southwest. These storms are beautiful to observe and experience, but they can also be dangerous and deadly. They often cause loss of life and millions of dollars of property damage.

The point is that "rivers" such as the Santa Cruz are dry 80 percent of the year. However, ephemeral streams like the Santa Cruz have sections—or reaches—that owe their flows primarily to effluent from local wastewater treatment facilities. Such reaches, which are actually independent ecosystems, are more specifically designated "effluentdependent".

THE 1972 CLEAN WATER ACT

I want to emphasize from the outset that WESTCAS supports the objectives established by the Clean Water Act. The Act has provided all of us with a major tool to restore and maintain the physical and biological integrity of the nation's navigable waters.

Our concerns arise from the application of the Clean Water Act to the arid West environment. Concepts and regulations that make perfect sense when developed in terms of "wet" ecosystems have major flaws when applied to arid West water and wastewater situations. Water quality standards are a good example of this. State water quality standards and EPA permit limits are being established on the basis of nationally-based scientific water quality criteria developed in and for "wet ecosystems." Unfortunately, those who established these national criteria failed to take into consideration differences in environmental ecosystems such as those found in arid and semi-arid ecosystems.

Under current federal policies, states and agencies must use these national criteria as a basis to develop state water quality standards. Otherwise, states must develop their own site-specific data to justify using different water quality standards. In other words, arid states that believe national criteria are inappropriate for all of their ecosystems must choose between two options: (1) use these inappropriate national water quality criteria, or, (2) invest extensive local financial and scientific resources to develop site-specific standards for each stream in these ecosystems. This is an extremely burdensome and expensive task. To accomplish this, the state must identify designated uses for each stream reach, then develop water quality criteria documents to calculate the water quality standards necessary to protect the designated uses.

Another unique feature of the 'arid West is the extensive use of constructed water conveyance systems. During the reclamation of the arid West over the last 90 years, canals were constructed to transport groundwater or surface water to agricultural lands or municipal water treatment plants. Incidental ecosystems have evolved in some of these canal systems. Future regulations for canals must recognize the original intended water use, and not impede critical water management programs to meet a national fishable/swimmable policy. Canals were designed to move water for human use, not maintain an artificially constructed fishery. The Reauthorization should also permit the development of water quality standards to allow the use of ephemeral streams for the transportation of reclaimed water.

AMENDMENTS TO THE CLEAN WATER ACT: WESTERN ISSUES UNADRESSED

WESTCAS members, and other water and wastewater agencies throughout the West, must perform a balancing act between competing forces. On the one hand, we must fulfill our mandated responsibility to protect the environment by meeting NPDES permit requirements; on the other hand, we must convince our local elected officials and ratepayers that we are spending increasingly limited resources wisely and efficiently. But it is difficult for us to justify expending millions of dollars to build new wastewater treatment facilities, or to retrofit existing ones, to comply with increasingly stringent standards for effluent discharges when such additional improvements will result in no measurable net environmental benefit. The costs could actually reach into the billions, if the same inappropriate water quality standards are required for stormwater discharges. The West needs the local and regional flexibility to adapt water quality programs to local ecosystems and conditions, particularly in the absence of federal dollars for these national mandates.

Now I want to make it clear that we are not arguing that these ephemeral stream environments do not need protection from pollutants. Because, they do. In fact, when effluent is discharged to certain reaches of these ephemeral streams, a lush riparian ecosystem is often created. If the discharges are continuous, a unique biological community may evolve. The photographs in Exhibit 3 illustrate this on a reach of the Santa Cruz River below Pima County's Ina Road Water Pollution Control Facility. This reach is a year-round, effluent-dependent ephemeral stream which has created a unique environment for birds, reptiles, and small animals. And we believe that we have a major responsibility to protect such ecosystems.

WESTCAS members have consistently supported the goals of the Clean Water Act. We believe that S. 1114 will significantly enhance our national efforts on water pollution. However, the Reauthorization needs to address the issues essential to the management of the water and wastewater resources of the arid West. We respectfully request the Committee to add an "Arid West" finding to S. 1114. The finding would state that Congress recognizes the diversity of watersheds and waterbodies throughout the nation and that environmental protection of arid West ephemeral and effluent-dependent ecosystems would be enhanced by the development of regional water quality criteria documents. This finding would specifically indicate the intent of Congress regarding water quality regulations for arid West ecosystems.

We further urge the committee to add "Arid West" amendments to the bill to address these special needs. First, in regard to water quality criteria and standards, these amendments should:

- Authorize and fund research to develop appropriate water quality criteria for arid ecosystems;
- Require the development of appropriate water quality standards for canals and other man-made waterways which protect the intended uses of these water conveyance and irrigation systems;
- Modify the anti-backsliding concept to allow development and adoption of appropriate water quality criteria and water quality standards suitable for the arid West.

Second, these amendments should also address:

- The primacy of the states in designating appropriate uses and protection of their waters;
- The utilization of reclaimed water as a valuable water supply resource in the arid West;
- The ability of reclaimed water to create and maintain riparian habitats;
- The interaction between the environmental, social and economic effects of policies, regulations and permits designed to protect arid ecosystems;
- The use of "biomonitoring" (whole effluent toxicity testing) as a warning signal rather than as an enforcement tool.

WESTCAS has prepared specific language on these issues for the Committee's consideration in the Reauthorization process. This language will lead to practical, workable regulatory guidelines which will enable Western agencies to manage scarce water resources in an environmentally sound manner with strong consideration for local concerns and values.

WESTCAS agrees with the testimony recently presented to the House of Representatives' Committee on Transportation and Public Works, Subcommittee on Water Resources and Environment, by the National Governor's Association and the Association of Metropolitan Sewerage Agencies on the critical need for significantly increased funding for Clean Water activities. We agree with the testimony of the National Association of Counties on the need to reinstate a Clean Water grants program for special needs and special communities. WESTCAS also supports the voluntary program approach for watershed management, but we have some concerns about the implementation of the watershed management concept.

WATERSHED MANAGEMENT

Many distinguished organizations and individuals have been advocating a watershed management approach to resolve water quality issues. The voluntary watershed management program concept in S. 1114 reflects the recent increase of interest in this approach. WESTCAS supports the concept of water quality planning and program implementation using a watershed management approach. WESTCAS members can bring many years of experience in water quality planning, financing improvements and operating facilities to this approach. These experiences prompt us to approach the implementation of this concept with prudent caution.

We do not believe that any single methodology or perspective is a panacea to solve our water quality problems. An elaborate structure of federal, state and local regulations and governing entities has evolved to meet the requirements of the current Clean Water Act. The integration of the watershed management approach into these existing structures must be designed, managed and implemented with great care. The voluntary programs encouraged by this legislation should be carefully monitored to allow this approach the greatest opportunity to grow and succeed. WESTCAS has developed a position statement of principles for a watershed management approach to water quality. These principles include watershed management decisions based on good science and watershed program funding from multiple sources. These positions are included in our written submission to the Committee.

WESTCAS has also prepared specific comments on other provisions of S. 1114. However, in recognition of the committee's time constraints, I will not review all these statements at this time. The comments on S. 1114, the watershed management position statement and proposed Reauthorization language on arid West issues are attached to our written submission as Exhibits 4, 5 and 6, respectively.

ARID WEST DEMONSTRATION AND RESEARCH PROJECTS

WESTCAS members are developing several projects and programs within their own states to research, demonstrate and facilitate better management of water and wastewater resources throughout the arid West. These include wetlands, reclaimed

water, desalinization projects (Eastern Municipal Water District—California); use attainability analysis (Santa Ana River Dischargers Association under the management of the Santa Ana Watershed Project Authority—California); reclaimed water/recharge projects (Phoenix, Mesa, Tempe and Scottsdale—Arizona); wetlands (Pine-top-Lakeside—Arizona) and the regional Water Quality Research Project (Pima County Wastewater—Tucson, Arizona). WESTCAS is also initiating a regional survey of arsenic levels in small water systems and coordinating the development of a statistical methodology to account for the natural biological variability of chronic effluent toxicity testing for western wastewater agencies. WESTCAS offers these efforts to the Subcommittee as examples of the kinds of programs the Congress should be encouraging in arid ecosystems. The future water supplies of the West are being developed through these projects.

Without good science, we run the risk of expending scarce financial and technical resources on unnecessary and non-critical pollution control activities. Without full-scale research and demonstration projects, we lack the ability to develop the appropriate water quality criteria and standards to effectively control water pollution, increase effluent utilization and encourage new technologies and environmentally sound methods to manage and preserve our limited water resources.

WESTCAS believes that there is only one way we can be certain we are protecting arid ecosystems in accordance with good science and the dictates of the Clean Water Act. And that is for us to conduct the basic scientific research and demonstration needed to identify "what is there" and then to determine how to protect it.

There is a very real danger that current federal policies are simply shifting the cost of much needed research and demonstration projects to local jurisdictions. It may be felt that this is a savings in federal expenditures. In reality, it results in excessive expenditures of resources at state and local levels that have limited transferable technology potential. Congress can achieve tremendous economies of scale by adopting a regional approach to the science of arid lands water quality management. Research and demonstration projects on western water resource management could be funded and implemented for regional benefit. Both the federal government and many diverse arid West interests would benefit from a federal partnership on these projects.

Let's talk about the role of research. The preamble to S. 1114 notes that municipalities and districts will be spending \$80 billion dollars in new capital costs to improve the nation's water quality. When we construct a new treatment plant or modify a process, 10 percent to 15 percent of the total construction budget is expended up front for planning and design. The implementation of the nation's water quality program demands an equivalent amount of research. Do we plan to spend \$8 to 12 billion dollars for research while we plan to construct \$80 billion dollars in water quality facility improvements? H.R. 1994, The Environmental Research, Development and Demonstration Authorization Act of 1993, would budget \$49 million for water quality research for the entire nation, about 2 percent of the total proposed construction funding for this fiscal year. We need to be as prudent and far-sighted in managing our nation's water quality program as individual agencies must be in managing the construction of treatment facility improvements and modifications.

Therefore, WESTCAS urges the committee to add a "Research Title" to S. 1114, including authorization language and suitable appropriations, to encourage the development and implementation of research and demonstration projects in the arid West regions to assure a plentiful supply of high-quality water for the region's future.

As a part of this research title, WESTCAS requests that the Subcommittee incorporate into the Clean Water Act the authorization for the Water Quality Research Project (WQRP), in Pima County, Arizona. This would create a program to conduct the research needed to develop appropriate water quality criteria documents for arid ecosystems throughout the arid West. WESTCAS supports the establishment of the regional WQRP, at the earliest possible opportunity, to conduct and coordinate this research for agencies throughout the arid West. The 1972 Clean Water Act actually dictates that this research activity should be encouraged and funded at the federal level. Under the Act, "the Administrator . . . shall develop and publish . . . criteria for water quality accurately reflecting the latest scientific knowledge . . ." Therefore, even though we believe this research program is already authorized in the Act, we would like the Committee to give their direct authorization of this program.

The research title should authorize \$5 million in FY 94 to begin the planning and design phase of the Project including construction of a biological laboratory. Pima County has offered to furnish the land, use of an analytical laboratory and profes-

sional staff support for the project. Copies of the proposal to establish the Regional Water Quality Research Project (WQRP) are attached to this testimony as Exhibits 7 and 8.

We also have documentation of other significant water quality and water resource management projects being pursued by WESTCAS agencies. These efforts can be discussed with your staff in more detail at their convenience, as some of these projects may also be appropriate for incorporation into a Clean Water Research title.

CONCLUSION

In closing, Mr. Chairman and Members of this Subcommittee, on behalf of WESTCAS, I would like to thank you once again for allowing me to appear before you. WESTCAS is anxious to work with you to bring this arid West perspective to the Clean Water Act Reauthorization. We appreciate the time and interest of the Committee in these issues.

STATEMENT OF HON. PAUL S. SARBANES, U.S. SENATOR FROM THE STATE OF MARYLAND

Mr. Chairman and Members of the Subcommittee. Thank you for this opportunity to testify on the Clean Water Act reauthorization and specifically on the Chesapeake Bay Restoration Program. I want to commend you for your efforts in developing comprehensive legislation to reauthorize and strengthen the Clean Water Act. The Clean Water Act has been fundamental to the national effort to clean up our Nation's waterways and fundamental to the cooperative effort to improve the water quality and restore the living resources of the Chesapeake Bay. Reauthorization of this Act—with continued funding for state sewage treatment revolving funds and new initiatives to address non-point source pollution, among other issues—is absolutely essential.

Today, I wish to report on the current state of the Chesapeake Bay and to urge the Committee to enhance the Chesapeake Bay Program by including S. 567, the Chesapeake Bay Restoration Act, which I and the other Members from the Bay area states introduced earlier this year, in the new Clean Water Act.

The Chesapeake Bay Program which was authorized by this Committee in the 1987 Water Quality Act, has been a successful endeavor. The cooperative Federal-State and interstate management structure established through the Chesapeake Bay Program has provided the framework for the restoration of the Bay and serves as a model for other estuaries throughout the country and around the world. The Bay Program has pioneered pollution prevention techniques such as phosphate controls, bans on toxic boat paint, nutrient management efforts, and programs to cut pesticide use on cropland. The Program serves as a proving ground for innovative approaches to environmental restoration.

With the signing of the Chesapeake Bay Agreement in 1987 and the 1992 amendments to the Agreement, the Federal government and the Bay area jurisdictions—Pennsylvania, Maryland, Virginia, the District of Columbia and their local governments—set goals, made plans and have undertaken commitments to an ambitious program to achieve improved water quality and living resources productivity.

The level of public support and the degree of cooperation and coordination among all parties—the Federal, State and local governments; environmental, community and citizens groups—is unparalleled. There are over 700 groups and some 40 committees involved in the Bay Program. Nine Federal agencies have signed Memoranda of Understanding (MOUs) with EPA to participate in the Program.

In the years since the Bay Program was authorized, substantial progress has been made both in putting in place a coordinated Federal-State-local-citizen management structure and in specific programs to address key problems in the Bay such as nutrient loads and the decline of living resources. Throughout this process, the Federal role has been crucial. It has served, in effect, as the glue that binds the program together and the catalyst that keeps it moving forward.

There are signs that the Bay is improving:

- Phosphorus discharges from municipal treatment plants, industry and nonpoint sources into the Bay have been reduced by 35 percent from 1985 levels. This is a direct result of the phosphate detergent ban now in place in each State and the District of Columbia, new sewage treatment plant construction featuring processes for advanced phosphorus removal, and the Bay Program's unique non-point source controls.

- Submerged Aquatic Vegetation (SAV), which provides critical habitat for the Bay's living resources, has made a slow but steady comeback from dramatic declines in the 1960s and 1970s. This can be directly traced to improved water quality.
- Striped bass have also made a significant recovery from the depleted stocks of the early 1980s. This success demonstrates that management controls can make a difference in the health of the Bay's resources.

But, despite these efforts, the job of restoring the Chesapeake to levels of quality and productivity that existed earlier in this century is far from complete.

Many of the Bay's living resources—oysters, shad, white perch—which are indicators of the Bay's health, are still in decline.

Runoff from farms and city streets and pollution from fertilizers, animal wastes, and air deposition, among other so-called non-point sources, continue to deprive the Bay of life-sustaining oxygen. Nitrogen loads to the Bay have increased by about 5 percent since 1985, despite the Chesapeake Bay's nutrient management program.

Population growth and development, and resulting pollution impacts in the watershed, threaten to undermine the gains that have been made thus far. The population of the U.S. increased by 22% in the past twenty years. In the Chesapeake Bay region, the population grew by roughly 40% over this same period. The cumulative effect of the growth in population is putting enormous pressures on our natural resource base.

Toxic chemicals are still present in the Bay's surface and bottom waters, having untold impacts on the Bay's water quality and wildlife.

A 1991 report prepared by the Chesapeake Bay Foundation entitled "Turning the Tide" documents many of these trends. It is clear that we need to do much more to really "turn the tide" and restore the Bay to health.

1993 marks the tenth anniversary of the signing of the first Chesapeake Bay Agreement and the beginning of a new phase in the Chesapeake Bay restoration effort. We have moved from the planning and analytical phase to advanced implementation of programs. Many of the relatively easy steps have been taken. Now we must begin addressing the problems that are much more difficult to resolve, as well as more expensive. New approaches and enhanced resources and effort are essential if we are to meet our goals and objectives in the Bay.

In order to address these problems I convened a distinguished group of experts on the Chesapeake Bay, consisting of representatives of the Bay area States, the District of Columbia, the Chesapeake Bay Commission, the Citizens Advisory Committee, the Scientific and Technical Advisory Committee, the Local Government Advisory Committee, the Alliance for the Chesapeake Bay, the Chesapeake Bay Foundation, and other agencies and organizations responsible for implementing the strategies and programs called for under the Bay Agreement. I asked them to identify the highest priority needs for the restoration of the Chesapeake in the years ahead. We have continued to refine these needs and the results of this effort are embodied in this measure.

What does the legislation do?

- First, it improves upon the management of the Bay program by facilitating cooperation and coordination among the various agencies and programs of the Federal government in support of the restoration of Chesapeake Bay. There are over sixteen Federal agencies or departments with responsibility for the stewardship of the Bay's resources or which have programs that influence or impact both directly and indirectly upon the Bay. These agencies include the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the National Park Service, the National Oceanic and Atmospheric Administration, the Department of Defense, the U.S. Forest Service, the Soil Conservation Service and the Federal Highway Administration. By more effectively sharing information, pooling agency expertise and combining and targeting resources, we can improve the Federal response, get "more bang for the buck," and greatly enhance our abilities to protect and restore the Chesapeake Bay.

The legislation identifies and codifies the responsibilities of all the Federal agencies involved in the Bay cleanup effort and requires that they cooperate in developing and implementing plans, programs and projects to meet their commitments to the Bay program. Furthermore, it requires those agencies to report in their annual budget submissions on the activities that are being undertaken and planned. This will help ensure accountability of the agencies and that any problems encountered come to the attention of the Congress.

- Second, it requires the Federal facilities within the Chesapeake Bay watershed to review their operations on a regular basis and take corrective actions to ensure that these facilities do not adversely impact on the Bay's water quality

and living resources. A number of Federal agencies own or occupy large tracts of real estate in the Chesapeake Bay watershed. There are 66 military installations on approximately 350,000 acres. The U.S. Fish and Wildlife Service has 13 National Wildlife Refuges and a number of other facilities occupying approximately 46,000 acres. The Army Corps of Engineers owns approximately 70,000 acres in the watershed. While these agencies have made great strides in recent years to reduce discharges into the Bay, there are still problems to be resolved to further reduce point and nonpoint source discharge from Federally owned or occupied real estate and protect the natural resources of these areas.

The legislation would require each department, agency or instrumentality of the United States which owns or operates facilities within the Bay watershed to perform an annual assessment of their facilities to ensure consistency and compliance with the commitments, goals and objectives of the Bay program. It would also require the agencies to develop a detailed plan, funding mechanism and schedule for addressing or mitigating any potential impacts.

- Third, it authorizes a comprehensive research, monitoring and data collection program to assess the status and trends in the environmental quality and living resources of the major tributaries, rivers and streams within the Chesapeake Bay watershed and to assist in the development of management plans for such waters. Until now, the principal focus of the Bay cleanup effort has been on the mainstem of the Chesapeake. It has become increasingly clear however that many of the Bay's problems originate in the rivers and streams which flow into the Bay and that expanded efforts are needed in these waters if we are to achieve improvements in conditions in the Bay watershed. In the 1992 amendments to the Chesapeake Bay Agreement, the Chesapeake Executive Council committed to develop and begin implementation of tributary-specific strategies to "achieve the water quality requirements necessary to restore living resources in both the mainstem and the tributaries."

Although we have an extensive body of information about the mainstem Bay and its dynamics from current monitoring and modeling programs, there is a critical need for enhanced basic and applied scientific research and long term monitoring of the trends in environmental quality and living resources of the tributaries. For example we do not have a system for accounting for sources of nutrients, and the movements of nutrients, pollutants and sediments through the watershed.

It is clear that one of the most cost-effective ways to protect the rivers and streams in the watershed is to help, encourage and promote stewardship among the citizens and other interested parties who have a direct stake in the specific local situation. Stewardship starts with the individual citizens who live in the watershed. By conserving and protecting local water resources, citizens can also help to clean up the Bay. However they frequently need guidance in identifying the threats to the water body and in devising appropriate solutions.

The legislation specifically encourages local and private sector participation in efforts to protect and restore the rivers and streams in the Bay watershed by establishing a technical assistance and small grants program to support such activities as developing citizen monitoring programs, initiating local pollution prevention techniques and practices, and determining the most effective and appropriate vegetative plantings to prevent non-point source runoff into the rivers and streams. The "seed grants" would be available on a competitive and cost-sharing basis. The legislation also requires that the local efforts be coordinated in a watershed-wide strategy.

- Fourth, the legislation provides support to State and local governments in collecting and analyzing information about land use around the Bay to give planners better tools in making sound land use management decisions. The Year 2020 report underscored the need for comprehensive and coordinated information about forest resources, important habitat areas, unique and scenic areas and other sensitive areas so that planners can take this information into consideration in their planning and development activities. While land management and use is not a Federal responsibility, the Federal government through agencies like the Soil Conservation Service, U.S. Forest Service, U.S. Geological Service and NOAA, to name a few, have invaluable information and technical expertise which can be of great assistance to state and local authorities, when properly integrated. The legislation authorizes EPA to work with other Federal agencies in developing a coordinated watershed land use data base.
- Fifth, it establishes a habitat restoration and enhancement demonstration program to develop, demonstrate and showcase various low-cost techniques for restoring or enhancing wetlands, forest riparian zones and other types of habitat associated with the Chesapeake Bay and its tributaries. The wetlands, sub-

merged aquatic vegetation (SAV) beds, and forest buffer strips play a vital role in the Bay by absorbing nutrients such as phosphorus and nitrogen, trapping sediments, producing oxygen, and providing food, shelter and nursery areas for fish and wildlife. They also serve as measures, or "indicators" of the Bay's health. Scientists have demonstrated a clear link between water quality conditions and the survival and health of these various types of habitat. Protecting and restoring these resources offers tremendous opportunities to improve water quality conditions necessary to support the living resources of the Bay and its tributaries and provide a host of other benefits.

Unfortunately, there is no centralized data base of scientific literature on habitat restoration design and techniques. We need to learn more about the effectiveness of different kinds of riparian zone vegetation in different geologic conditions. For example are forest buffer strips more effective in removing nutrients than other types of vegetative plantings? Under what conditions? What types of forest cover remove the most nutrients? How much of a buffer strip is needed to prevent or reduce runoff? More information is needed about the hydrology of rivers and streams and the mechanisms by which nutrients are removed. It is these kinds of questions and information gaps which the habitat restoration and enhancement demonstration program authorized in this legislation seeks to address.

Sixth, the legislation authorizes funding to assist in the implementation of specific actions to reduce toxics use and risks throughout the Bay watershed. The 1987 Bay Agreement committed the signatories to the ambitious goal of eliminating all controllable sources of toxics to the Chesapeake Bay and the Bay Program is currently in the process of reviewing the Baywide toxics reduction strategy to better target toxic pollutant problems. One of the most important steps in accomplishing this goal is identifying and quantifying the amount of toxics being discharged into the Bay and its tributaries. The legislation specifically directs the Administrator to assist the States in improving this data collection process and integrating this information into the Chesapeake Bay Program Toxics Loading Inventory. It also directs the EPA Administrator to begin implementing toxics reduction, pollution prevention and management actions, including targeted demonstration projects, to achieve the toxics reduction goals of the Bay Agreement.

The Chesapeake Bay Restoration Act, in my view, represents the third leg of the three-legged stool on which the Chesapeake Bay Program must rest. The first two legs were established in the 1987 Water Quality Act authorization—an authorization for EPA to administer the program and an authorization for grants to the Bay area States which has been used primarily for non-point source reduction efforts. The third leg, which this legislation would authorize, provides the authority and resources that are necessary for Federal agencies to implement the strategies called for under the 1987 Bay Agreement and the 1992 amendments to the Agreement.

The legislation is not intended as an all-encompassing measure which seeks to remedy all of the problems of the Bay. Some of these issues are being addressed elsewhere in the bill introduced by Senator Baucus and Senator Chafee, or in other measures. Rather, the Chesapeake Bay Restoration Act is intended to continue and improve upon the Chesapeake Bay Program that was authorized in the 1987 Clean Water Act. The measure was developed in consultation and cooperation with the signatories to the Bay Agreement and has the strong support of the Chesapeake Bay Commission, the Chesapeake Bay Foundation and the Congressional Delegations from the region. An identical bill has been introduced in the House, with broad support. I ask that copies of letters in support of this legislation be included in the hearing record following my statement.

I hope that the Committee can approve S. 567, the Chesapeake Bay Restoration Act and include its provisions in the new Clean Water Act.

Chesapeake Bay Commission

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March 8, 1993

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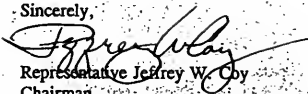
Dear Senator Sarbanes:

I am writing to express the Chesapeake Bay Commission's strong support for the Chesapeake Bay Restoration Act (CBRA) of 1993. As you know, the Chesapeake Bay Commission is a tri-state legislative advisory commission created to assist the General Assemblies of Maryland, Virginia and Pennsylvania in addressing Chesapeake Bay-related issues which are of mutual concern to the three member states. The congressional reauthorization and enhancement of the Chesapeake Bay Program is certainly one such issue.

The Chesapeake Bay Restoration Act of 1993 builds upon the highly successful program authorized in the 1987 Water Quality Act and includes important new federal initiatives in the areas of Federal agency cooperation, coordination and compliance; the conservation and restoration of the tributaries, rivers and streams in the Bay watershed; habitat protection and restoration; population growth and development; and toxics reduction. These are major areas in which we, the states, require additional federal assistance. The legislation provides enhanced resources and new programs that will assist us and other governmental and non-governmental organizations in addressing and meeting the needs for the restoration of the Chesapeake Bay in the years ahead.

The legislation is vital to the continued success of our efforts to protect this national treasure, the Chesapeake Bay. We believe it warrants and should receive the full backing of citizens throughout the Chesapeake Bay watershed. I want to commend you for your leadership in developing this important measure.

Sincerely,


Representative Jeffrey W. Coy
Chairman

A legislative commission serving Maryland, Pennsylvania and Virginia.



Chesapeake Bay Foundation

Environmental Defense - Environmental Education - Land Management

162 Prince George Street - Annapolis, Maryland 21402
(410) 268-8816 Fax (410) 268-6687

March 9, 1993

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Honorable Paul S. Sarbanes
309 Senate Hart Office Building
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Dear Senator Sarbanes:

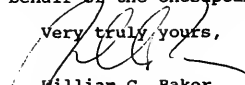
I am writing to express the Chesapeake Bay Foundation's strong support for the Chesapeake Bay Restoration Act of 1993. As you know, I have been concerned about the apparent loss of momentum within the Chesapeake Bay Program in recent months. Although I realize that no single piece of legislation can save the Chesapeake Bay, I believe this bill will shake up and reenergize the Bay program. I am particularly enthusiastic about the new wetlands restoration program. It is time to move beyond simply focussing on preserving our remaining wetlands, and get on with the job of restoring and enhancing the resilience of the Bay.

I am also glad to see the Act's focus on the tributary strategies. This legislation will take us the necessary next step towards true integrated watershed management, an approach pioneered by the Chesapeake Bay Program that is now widely recognized as the only logical way to protect our waterbodies.

Finally, the participation of Federal agencies new to the Bay Program, including the Departments of Transportation and Housing and Urban Development, recognizes the fact that many parts of the Federal government, not just those concerned with the environment, affect the health of the Bay. As we increasingly recognize the linkages between how we use the land and the health of the Bay, these agencies' participation in the Bay Program has become essential.

In summary, this legislation is a definite step forward for the Bay Program, and will aim it in the right direction for the rest of the century. I would like to thank you and your cosponsors for your efforts on behalf of this legislation and on behalf of the Chesapeake Bay.

Very truly yours,


William C. Baker
President

WCB:CS

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444 NORTH CAPITOL ST., NW #315
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March 8, 1993

The Honorable Paul S. Sarbanes
United States Senate
Washington, DC 20510

Dear Senator Sarbanes:

I am writing, in my capacity as Governor and Chair of the Executive Council of the Chesapeake Bay Agreement, to commend you for the initiative you have taken to reauthorize and expand federal participation in the Chesapeake Bay program through the introduction of the Chesapeake Bay Restoration Act of 1993. It is time to update the existing federal involvement, and build upon the federal-state partnership we established in the 1987 Chesapeake Bay Agreement. Your legislation opens a new phase in the Bay program and gives the clean up effort an important boost.

The Chesapeake Bay watershed will face increasing environmental threats in the years ahead. In 1992, the Executive Council agreed to amendments that will expand the program to include control of the pollution that flows into the Bay from its major tributaries. This approach will require substantial new efforts to reduce the amount of nutrients that enter the Bay from nonpoint sources. The new efforts are necessary if we are to meet the 40% nutrient reduction goal called for in the Bay agreement.

The cooperation of government at the federal, state and local level will be essential to protecting and restoring the Bay. Your bill helps to establish the blueprint for that cooperation. It also provides for new opportunities on habitat restoration through the creation of low-cost restoration and enhancement demonstration projects. These projects directly address an area that is key to supporting the living resources of the Bay, the main goal of the Bay agreement.

The Honorable Paul S. Sarbanes
March 8, 1993
Page 2-

I also want to thank you, and Charles Stek of your office, for consulting extensively with my Washington Office, Maryland state agencies, the Chesapeake Bay Commission, and all sectors of the Bay community during the process of drafting your legislation. The final product reflects a broad consensus of what needs to be done to build upon the progress we have already made.

I look forward to working with you to ensure the passage of this important legislation.

Sincerely,


Governor

SIERRA
CLUB



408 C Street, N.E. Washington, D.C. 20002 202-547-1141

CLEANING UP GREAT LAKES TOXIC WATERS

STATEMENT OF GEORGE COLING
SIERRA CLUB GREAT LAKES SPECIALIST
AUGUST 4, 1993

ON THE NEED FOR A COMPREHENSIVE PROGRAM TO
CLEAN UP CONTAMINATED SEDIMENTS IN THE GREAT LAKES
BEFORE THE SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
CHAIRIED BY THE HONORABLE BOB GRAHAM

ON BEHALF OF THE SIERRA CLUB, CITIZENS FOR A BETTER ENVIRONMENT,
COAST ALLIANCE, CONTAMINATED SEDIMENTS WORK GROUP,
GREAT LAKES UNITED,
THE LAKE MICHIGAN FEDERATION,
AND THE LAKE SUPERIOR ALLIANCE

"When we try to pick out anything by itself, we find it hitched to everything else in the universe." *John Muir*
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I would like to thank the Subcommittee and the chairman for holding this hearing and for leading the effort to clean up the nation's waters.

My name is George Coling, and I am the Sierra Club's Great Lakes Specialist based in Washington. I am testifying today on behalf of the Sierra Club, the Lake Michigan Federation, Citizens for a Better Environment, Great Lakes United, Natural Resources Defense Council, the Coast Alliance, the Contaminated Sediments Work Group and the Lake Superior Alliance. These organizations have appeared many times before Congress to urge a comprehensive program to clean up contaminated sediments that line our harbors and stop additional toxic pollution from sullyng our waters.

It is my pleasure today to voice the strong support of these organizations for the Great Lakes Clean Water Amendments Act of 1993, S. 1183. At the outset, we want to thank Senator Metzenbaum, Senator Glenn and other co-sponsors of the bill for their continued leadership in cleaning up the Great Lakes. These lakes are the largest freshwater ecosystem in the world, and only through the continued leadership of our elected officials will the Great Lakes continue to maintain the vibrant diversity of life and culture around them. We feel that this bill, with the modifications and additions suggested below, offers solid progress in cleaning up the toxic muck that clogs harbors, threatens public health and jeopardizes 2.9 million jobs in fishing, shipping and tourism and \$76 billion of the Great Lakes economy associated with these jobs.

Before specifically commenting on the bill, I wish to emphasize that we view this bill an integral part of a comprehensive, national plan for cleaning up poisoned sediments. On July 1, 1993, Brett Hulse, Sierra Club Great Lakes Program Director, testified before this Subcommittee and outlined this eight point plan. In sum, it is:

1. EPA needs statutory authority to develop a strong national program with deadlines and funding to measure and clean up toxic sediments with strong and practical sediment quality criteria (SQC) so that communities can identify and cleanup toxics sediments in their area. Federal criteria exist for every other major form of pollution. SQC are needed to identify the extent of sediment contamination, to help protect clean areas and promote pollution prevention, to identify critical areas for cleanup, and to determine appropriate methods to manage dredge materials.
2. EPA must develop policies to apply SQC to the states and other programs. States need EPA guidance to apply the SQC to various programs like the NPDES, non-point, ocean and estuarine dumping criteria, and Superfund.

3. EPA should administer a national sediment program to use technologies developed by EPA's Great Lakes (ARCS) program and the Superfund SITES programs to cleanup toxic sites in the Great Lakes and marine sites. This program also needs to test new technologies in critical marine sites in addition to New York/New Jersey harbors which were authorized under section 405 of WRDA of 1992. EPA has bench tested at least five technologies in the Great Lakes but full-scale tests are needed to determine costs and effectiveness before recommendations can be made for full cleanups.
4. Make pollution prevention measures a condition to receive a permit to dispose of contaminated sediments and include pollution and sediment prevention measures in other Clean Water Act programs to reduce further sediment contamination.
5. The EPA/Corps ocean disposal program should be improved since the ocean dumping criteria (as mandated by section 103 of the (MPRSA) lack appropriate thresholds to interpret bioaccumulation test results. This program is being run by the EPA regional office and Corps districts and lacks adequate public review and central management. Clarification of roles are needed.
6. Develop a phase-out period for open water dumping of contaminated sediments in sensitive areas like Lake Superior as called for by the International Joint Commission.
7. Strengthen and enact the Great Lakes Clean Water Amendments to improve sediment management and cleanup in the Great Lakes -- our topic today.
8. Create a funding mechanism to pay for sediment management and clean-up under section 115 of the WPCA or another appropriate section.

Mr. Hulsey's July 1 testimony also outlined our recommendations for preventing further toxic contamination of the Great Lakes, an ecosystem whose management goal, by international agreement, is "zero discharge" of persistent toxic chemicals. I am giving this testimony as a complement to the July 1 recommendations.

BAUCUS CHAFEE BILL: A PROMISING START

The Baucus-Chafee Water Pollution and Control Act of 1993, S. 1114, makes significant progress towards the above needed program and complements the approach in this Great Lakes bill. For example, we applaud the committee's foresight to give EPA clear authority to release sediment quality criteria (SQC) and set deadlines for 8 chemicals, including PCBs and Dioxin within five years. The PCB and dioxin standard are particularly important given the current controversies in New York/New Jersey and Duluth/Superior harbors. But since EPA has five draft criteria pending for release this summer, we feel that they can include up to eight additional

chemicals in that five year period once their protocol for doing SQC is established.

TOXIC HARBORS: A GREAT LAKES PLAGUE

Throughout the Great Lakes, contaminated sediments plague the use of our harbors and waterways. Water use in forty-two of forty-three Great Lakes Areas of Concern is impaired by the buildup of toxic muck. Table 6-5 shows that there are 193 contaminated sediments sites in Ohio (not all in the Great Lakes Basin), and evidence on the ill effects of toxic sediments on smaller lakes in the Basin, such as Onondaga Lake near Syracuse, is building. Persistent toxic chemicals like PCBs, cadmium, dioxin, DDT and other pesticide and mercury befoul the sediments, bioaccumulate through the Great Lakes food chain, vaporize and travel through the atmosphere to pollute more pristine parts of the lakes, and -- in the lack of EPA sediment Quality Criteria -- represent a potential time bomb if they are dredged or removed to another area.

These sediments account for 75% of the PCBs going into Lake Michigan, according to the National Wildlife Federation, they are also the main source of fish contamination in that Lake. According to the EPA National Water Quality Inventory, 1988 Report to Congress, "The main reason for these fishing restrictions is contamination of sediments by toxic chemicals such as priority organics that are, in turn, passed along to macroinvertebrates and fish." (page 35). The 1990 Report to Congress from the same EPA program noted that "...landfills and contaminated sediments are the leading sources impairing the Great Lakes." (page 39). Meanwhile, more and more sediment washes through Great Lakes streams and rivers, picking up unknown loadings of contaminants from a wide variety of agricultural, mining, forestry and industrial sources.

JOBS AT RISK

These toxic sediments are a clear threat to not only the Great Lakes Environment, but also the Great Lakes economy. Tourism is now the second largest sector of the economy in Ohio and many Great Lakes states. Yet this economy is threatened by continued contamination. Nitrate pollution and persistent toxics levels for PCBs and dioxin are increasing in several lakes. Table I-2 shows the persistent toxic levels of PCBs in coho salmon in all the Great Lakes. These levels are over 70 times EPA's 1/100,000 cancer risk level and may cause thousands of cancer cases each year.

In June, Sierra Club recently released its Clean Lakes, Clean Jobs study that documents the jobs and money at risk if we fail to cleanup the toxic blobs that rest at the bottom of every Great Lakes harbor. Billions of dollars and thousands of jobs are at risk if toxics are not cleaned up (see table).

GREAT LAKES JOBS AT RISK

	JOB	COSTS
HEALTH	*	\$18.47 Billion
FISHING	89,000	4.0 Billion
SHIPPING	44,000	3.5 Billion
TOURISM	2,760,000**	69.0 Billion
TOTAL	2,893,000	\$94.97 Billion

[* complete data unavailable; ** assumes \$25,000/direct job]

Great Lakes tourism is the most threatened industry. Tourism is a \$69 billion industry in the Great Lakes Basin and the number two industry in several states. In Ohio, Lake Erie recreation industry accounts for \$8.5 billion and 152,000 jobs.

Approximately 89,000 fishing jobs and more than \$4 billion in commercial and sport fishing proceeds are in jeopardy. There are more restrictions on fish consumption in the Great Lakes than anywhere in the United States, 1,000 of the nation's 1,400 fishing restrictions -- five in seven -- come from Great Lakes states. As the EPA said, these are largely a result of sediment contamination.

Also at risk are more than 44,000 shipping jobs and \$3.5 billion in personal and corporate income, including state and local taxes paid by the ports. Contamination and lack of a national program to deal with this toxic muck prevent safe dredging in half of all Great Lakes harbors where sediments cannot safely be dredged.

Because communities cannot safely dredge this toxic sediment, barges must lightload their cargos an average of 480,000 pounds. This means lost profits and jobs in the millions for the entire Great Lakes Basin.

If you extrapolate these risks to the country at large and three other coasts, the potential job risk could be near 10 million and the commerce at risk could be near \$400 billion. That justifies an aggressive national program to identify and clean these sites. While the price tag for cleaning up all Great Lakes seems expensive -- \$10 billion by some estimates -- the potential of creating 400,000 jobs in depressed areas of the Great Lakes is enormous.

According to the EPA National Water Quality Inventory, 1990 Report to Congress, 67.7% or 3,288 miles of Great Lakes shoreline do not support Clean Water Act designated uses. Only 1.8% or 85 miles

fully support Clean Water Act designated uses for fishing and swimming. None of the shoreline in Wisconsin, Illinois, Indiana, Michigan, and Ohio supports full Clean Water Act designations.

Designated Use Support in Great Lakes

State	Great Lake Shore Miles	Shore Miles Assessed		Miles Fully Supporting	Miles Threatened	Miles Partially Supporting	Miles Not Supporting	
		Total	Percent Evaluated					Percent Monitored
Illinois	63	63	0	100	0	54	9	0
Indiana	43	43	0	100	—	—	43	—
Michigan	3,288	3,288	0	100	0	—	—	3,288
New York	577	577	100	0	85	15	477	0
Ohio	236	236	—	—	0	—	236	0
Wisconsin	650	650	100	0	0	0	650	0
Totals	4,857	4,857			85	69	1,415	3,288
Percent of Assessed Waters					1.8%	1.4%	29.1%	67.7%

— Not reported.

Source: 1990 State Section 305(b) reports.

EPA National Water Quality Inventory, 1990 Report to Congress, March 1992, Page 38.

ARCS: A GREAT LAKES SUCCESS STORY

We have several successful programs to address Great Lakes sediment pollution, like the Assessment and Remediation of Contaminated Sediments (ARCS) Program, set up under Section 118 of the 1987 Clean Water Act Amendments and the Great Lakes Critical Programs Act. These provide key demonstration programs and deadlines to test technologies and complete the Remedial Action Plans (RAP).

Sierra Club participates the ARCS Citizen Work Group, I can report some progress on this program -- five pilot treatments were tested last summer with some promising results. In the laboratory, over 10 technologies were tested. ARCS also did five in-depth contaminant assessments from Buffalo, Ashtabula, Saginaw, Indiana Harbor, and Sheboygan harbors. But these plans and tests are only that. We need a concrete program to clean up these 27 toxic Great Lakes hotspots and many others in ports around the country.

GREAT LAKES CLEAN WATER AMENDMENTS ACT: A NEEDED STEP

The Clean Water Act reauthorization presents a perfect opportunity to make additional progress in the Lakes (and throughout the nation). The Great Lakes Clean Water Amendments Act of 1993 is the basis for doing so. We urge that this bill, with the specific modifications and additions noted below, be merged with the Clean Water Act reauthorization vehicle.

Before discussing these points, I wish again to commend the authors of this bill for an well-crafted approach in identifying the sources of sedimentation, for their promising strategy for dealing with the contentious issue of confined disposal facilities and for their general leadership.

SPECIFIC MODIFICATIONS AND ADDITIONS NEEDED

Sierra Club and the other organizations represented in this statement offer the following comments on S. 1183.

MODIFICATIONS

Section 4: Include the possibility of adding more full scale demonstration projects in the program. The extensive mass-balance study done on Green Bay and other information may demonstrate enough knowledge to readily make the transition to a full-scale remediation within the time frame of the bill. Other sites for full-scale clean up might emerge, and EPA should be given latitude and encouragement to do more than five full-scale remediations. A change in the wording of line 24 of page 23 to, adding "...at least 5 full scale..." would provide sufficient latitude, but Congress should require an EPA report either directly to Congress or as a finding on whether or not other sites have been chosen and the rationale for this choice.

Section 4: Shorten the times for EPA's completion of pilot scale demonstrations and assessments. We suggest shortening the time frame for this work by three years. The success of the present ARCS program and the on-going work on the full-scale remediations should make the suggested time frame feasible. The pace of clean up must reflect the gravity of the environmental problem. EPA may need an increase in appropriations to the Great Lakes National Program Office to proceed at this pace, but this appropriation is a investment in the health of the Great Lakes economy and the health of its people that is well worth making.

ADDITIONS

Section 4. Broaden the application of assessments and pilot scale studies. We urge that the bill direct EPA to make assessments at and test more clean up technologies on a pilot scale at sites others than the present Areas of Concern. First of all, other Areas of Concern might be specified under the provisions of the Great Lakes Water Quality Agreement. Secondly, other sites, whether or not they have AOC status, will undoubtedly need at least pilot scale demonstration over the next several years. Specific candidates are Lake Calumet at Chicago, the focus of continued planning for its remediation and economic development of areas around it, and Onondaga Lake at Syracuse, subject of a management strategy under the 1990 Great Lakes Critical Programs Act. This legislation should provide for the transition from planning to remediation of Onondaga Lake and the application of what we have learned from ARCS to Lake Calumet and other appropriate lakes and waterways, not in the designated Areas of Concern.

New Section: Set a statutory deadline for completion of Phase II of EPA's Great Lakes Initiative. Another major success in the history of Great Lakes clean up is EPA's proposed Great Lakes Initiative. This proposed federal rule would provide for uniform water quality standards in each Great Lakes, levelling the economic playing field and adding stability to our Industrial Heartland. The Initiative would also require that bioaccumulation of persistent toxic chemicals, protection of vulnerable at-risk groups and other measures that build on the best science be used to provide much more stringent standards to safeguard the health of the present and future generations of people in the Great Lakes. The GLI is affordable. It is an investment that the nation must make to protect the largest freshwater ecosystem on the planet. Indeed, EPA is holding hearings on this rulemaking in Chicago today and tomorrow, and other environmentalists are speaking to the merits of this precedential rulemaking.

However, the scope of the present GLI includes only point source discharges. Sources for contaminated sediments, airborne toxics, polluted runoff and other source of chemical contamination of the Great Lakes has been assigned to a second phase of rulemaking, called the Toxic Reduction Initiative. We urge that the Great Lakes Clean Water Amendments Act put a statutory deadline on the completion of the Toxic Reduction Initiative. We suggest a proposal date of September 30, 1995, and promulgation date of December 31, 1996.

EPA deserves great credit for conceiving the Great Lakes Initiative as follow through on the 1987 revamping of the Great Lakes Water Quality Agreement. Nevertheless, the present GLI rule was moving slowly through the EPA until the 1990 Great Lakes Critical Programs Act specified a proposal date of June 1991. Even with that statutory dead line, it took a National Wildlife Federation lawsuit to force the proposal to be issued on March 31, 1993. Again, rulemaking must proceed according to the gravity of the environmental concern. The concern is grave, regulations for many of the sources of Great Lakes of pollution will be outmoded -- less than state of the science -- as soon as Great Lakes Initiative I is promulgated. Equity demands that EPA expeditiously address these other sources. Congress needs to set a statutory framework to marshal EPA's resources this expeditious pace.

Make Lake Superior a world-class pristine water body. We urge Congress to make Lake Superior a world-class demonstration area for zero discharge of persistent toxic chemicals. This action to implement the Great Lakes Water Quality Agreement follows through on the cogent 1991 recommendation of the International Joint Commission and strengthens the US Canada binational action plan for Lake Superior. Congress should stipulate that all of Lake Superior is an Outstanding Natural Resources Water under the Clean Water Act.

Any of our organizations may have more comments on the details of the legislation and communicate them to you by letter.

CONCLUSION

In conclusion, this year's Clean Water Act reauthorization and introduction of the Great Lakes Clean Water Amendments Act gives us the opportunity to stop additional persistent toxics from entering the Great Lakes and other waters of the United States and to clean up the current toxic hotspots. We look forward to working with the Senate, EPA and interested parties to respond to the moral imperative of protecting and restoring the precious Great Lakes for generations to come.

This is taken from EPA National Water Quality Inventory, 1990 Report to Congress, page 96

Table 6-5. Sediment Contamination Reported by States

State	Number of Sites	Contaminants Identified
Alaska	1	Aromatic hydrocarbons
Arizona	6	Pesticides, metals (boron, chromium, selenium), radiochemicals
California	1	Mercury
Connecticut	6	Lead, polychlorinated biphenyls (PCBs), organic chemicals, and other metals
Delaware	2	Metals
DC	—	Lead, cadmium, zinc, chlordane, DDT
Florida	—	—
Hawaii	1	Arsenic
Illinois	—	Heavy metals, DDT, PCBs, heptachlor epoxide
Indiana	8	Metals, polynuclear aromatic hydrocarbons (PAHs), cyanide, other organics
Iowa	1	PCBs
Kentucky	1	PCBs
Louisiana	7	Priority organics, creosote, metals, oil and grease, PCBs
Maine	7	Dimethyl formamide, toluene, trichloroethane, chlorinated solvents, tris (2,3-dibromopropyl) phosphate, PCBs, copper, cadmium
Maryland	—	Nickel, zinc, PAHs, non-DDT chlorinated pesticides, pesticides, DDT, PCBs and other metals
Massachusetts	13	Metals, priority organics, oil and grease
Michigan	13	Mercury, alkylated lead, PCBs, dioxin, benzo(a)pyrene, hexachlorobenzene (HCB), DDT, dieldrin, toxaphene, mirex
Minnesota	1	Mercury, PCBs, coal tars
Nevada	7	Mercury and other metals
New York	21	Priority organics, metals, pesticides
Ohio	193	Arsenic, cadmium, chromium, copper, lead, zinc
Oklahoma	10	Mercury, lead, zinc, chlordane, hydrocarbons, PCBs
Oregon	14	Arsenic, cadmium, chromium, copper, lead, nickel, zinc, DDT, PAHs, PCBs, phthalates, cyanide, volatile organic compounds, phenanthrene, pentachlorophenol
Rhode Island	—	—
South Carolina	2	PCBs, chromium, mercury
South Dakota	4	Mercury
Virginia	31	Selenium, chromium, arsenic, iron, manganese, nickel, cadmium, zinc, copper, mercury, lead
Virgin Islands	10	Mercury, copper, selenium, cadmium, nickel, zinc
Wisconsin	24	PCBs, dioxin, mercury, pentachlorophenol, arsenic, cadmium, chromium, zinc, oil and grease, pesticides, PAHs
Total	384	

— Not reported.

Source: 1990 State Section 305(b) reports.

STATEMENT OF WILLIAM C. BAKER, PRESIDENT, CHESAPEAKE BAY
FOUNDATION, ANNAPOLIS, MARYLAND

Mr. Chairman, members of the Committee, thank you for the opportunity to appear before you today. My name is William C. Baker; I'm the President of the Chesapeake Bay Foundation (CBF), a non-profit environmental organization founded 27 years ago and dedicated to restoring and protecting the Chesapeake Bay and its resources. We have over 87,000 members from all fifty states and 14 foreign countries. (In Texas, for instance, we have 50 members.) This diverse membership reflects the fact that the Chesapeake Bay is not only a worldwide treasure, but a national and international model for the restoration of our coastal waters. The program to restore the Bay is an effort involving the combined activities of federal, state, and local governments, as well as those of concerned citizens from all sectors of society. It is important to remember the Chesapeake Bay of 27 years ago. Even then, the words of H.L. Mencken, who called it "an immense protein factory," rang true. A quarter of a century ago, the Chesapeake produced one quarter of the nation's oysters, one half of all hard crabs (100 million pounds in a good year), and a staggering 95% of all soft crabs consumed in the United States. In addition, nine out of every ten striped bass caught from North Carolina to Maine were born in the Chesapeake Bay.

Today, the Bay is a far different place. For the first time ever, the Gulf Coast catch of blue crabs has exceeded the Chesapeake. Overfished, over fertilized with nitrogen and phosphates, poisoned with toxins, stripped of much of its valuable habitat, the Bay can be described as "degraded," "abused," and "polluted." But it is not dead. A decade of intense public and private effort to save the Bay has produced some signs of improvement and many signs of hope.

In assessing where we are today, and where we would like to be in ten years, it's important to remember how far we've come. A great deal has been achieved since 1983 which gives us confidence that by 2003 we can make just as much progress—if we identify where we want to go as boldly as we did ten years ago.

When the Chesapeake Bay Agreement was put in place in 1983:

- Detergents still contained phosphates
- The damaging impacts of nitrogen in the Bay were largely ignored and misunderstood
- No sewage treatment plants were designed to remove nitrogen
- Rockfish were almost commercially extinct, with a moratorium yet to come
- Fisheries management plans were a theoretical ideal
- Critical areas land use legislation was a just a proposal
- Agricultural programs focused almost exclusively on soil erosion
- Pollution prevention wasn't even discussed
- Pennsylvania wasn't a member of the Chesapeake Bay Commission

We now consider most of these issues routine; for example, we are debating the best way of achieving nitrogen removal from sewage treatment plants, not its necessity. We can't understand all the fuss about the phosphate detergent ban. And Pennsylvania is a full and complete partner that has most recently taken a leadership role on nutrient runoff from agricultural lands thanks to legislation sponsored by Representative Jeff Coy. It is important to keep this ten-year perspective in mind. A great deal can be achieved if we set our sights high and work together. But it is also clear that we have a long way yet to go. We cannot afford to reach only for what appears easy to achieve in the short term.

The primary Bay jurisdictions—Pennsylvania, Maryland, Virginia, and the District of Columbia—have spent hundreds of millions of their own dollars on restoring the Bay. But the Federal government's role in the Bay cleanup may be the linchpin. The funds provided by the EPA each year bring the Bay states to the table, where they can identify common concerns and develop common strategies to deal with the Bay's problems. This multi-state, team approach, almost unheard of ten years ago, minimizes finger pointing, and has resulted in the active involvement of one state—Pennsylvania—that doesn't even share a foot of the Bay's shoreline. Pennsylvania's participation, and even leadership on certain issues, is evidence of the power of the watershed approach to problem solving.

The Chesapeake Bay Foundation strongly supports the Chesapeake Bay Restoration Act of 1993 introduced by Senator Sarbanes with the full support of the Bay delegation. Although I realize that no single piece of legislation can save the Chesapeake Bay, I believe this bill will substantially advance the Bay cleanup. I am particularly enthusiastic about the new wetlands restoration program. It is high time to move beyond simply focussing on preserving our remaining wetlands, and get on with the job of restoring and enhancing the resilience of the Bay.

I am also glad to see the Act's focus on the tributary strategies. This legislation will take us the necessary next step towards true integrated watershed management, an approach pioneered by the Chesapeake Bay Program that is now widely recognized as the only logical way to protect our waterbodies.

Finally, the participation of Federal agencies new to the Bay Program, including the Departments of Transportation and Housing and Urban Development, recognizes the fact that many parts of the Federal government, not just those concerned with the environment, affect the health of the Bay. As we increasingly recognize the linkages between how we use the land and the health of the Bay, these agencies' participation in the Bay Program has become essential.

In summary, this legislation is a definite step forward for the Bay Program, and will aim it in the right direction for the rest of the century. Despite the value of the Restoration Act for the Bay, however, it is the language in the rest of the Clean Water Act that can make or break the cleanup. The issues you are debating—wetlands protection, combined sewer overflows, water quality standards, sewage treatment—are all pieces of the puzzle that must be assembled to restore the Chesapeake Bay. Polluted runoff—nonpoint source pollution—is one of the most pressing, and most difficult, water pollution issues that still needs to be addressed.

The Water Pollution Prevention and Control Act of 1993 (S. 1114) being discussed in this committee has many features we support. For example, it clearly embodies the concept that the most effective way to deal with pollution from toxic substances is to keep them out of discharges. It establishes stronger programs to deal with polluted runoff, including mandatory programs for impaired watersheds. It elevates the watershed to its appropriate position in the Clean Water Act, the focus for planning and implementing restoration programs. As you debate these and other issues related to the Clean Water Act, I hope you will remember the very real places—including the Chesapeake Bay—whose health depends on your actions.

The Chesapeake Bay watershed consists of some 64,000 square miles. Every drop of stormwater that washes off that vast area heads straight for the Bay. The watershed is now home to some 15 million people in six states and the District of Columbia, twice what it was before World War II. In order to restore the Bay, it will be necessary for us to reduce our cumulative impacts. This is a daunting challenge, because the population is conservatively projected to grow by 20% over the next 25 years, a one-third increase in the number of households. That population growth is the equivalent of the entire state of Mississippi picking up and moving to this area, with the corresponding demand for housing, roads, places to work, schools, sewage treatment plants, and so forth. In order to achieve a net improvement in the Bay, we will have to effectively accommodate this growth with NO additional pollution, or greatly increase per capita reductions in the impacts of existing residents. Just as the year 2000 once represented the distant future, the year 2020 will be upon us before we know it, and our children and grandchildren will be debating the implications of the projections for the year 2050. How we plan for the next 30 years will determine the nature of that debate, just as this discussion is largely the result of decisions made in the last 30 years.

It may sound presumptuous to say this, but the fact is that the world is watching us here in the Chesapeake Bay region. Every week, our offices are contacted by visitors from all over the world. In the past six months, we've hosted visitors from Great Britain, Japan, the former Soviet Union, Nepal, New Zealand, India, Peru, South Korea, Germany, Bulgaria, Poland, the Czech Republic, Hungary, Slovakia, Brazil, the Baltic Republics, Finland, and Sweden. This November, the Chesapeake Bay will be the centerpiece of the International Conference on Environmental Management of Enclosed Coastal Seas to be held in Baltimore, Maryland. Other estuaries around the country, as well as other environmental groups, look to the Bay as well. The National Estuary Program is modelled after the Chesapeake Bay Program; environmental groups, such as the Galveston Bay Foundation, have been modelled after the Chesapeake Bay Foundation. We in this region are indeed blazing a trail for the rest of the nation, even the world. I urge you to incorporate the Chesapeake Bay Restoration Act into the amended Clean Water Act. When you do that, please consider formally designating the Chesapeake Bay as "THE NATION'S ESTUARY," for that is what it truly is—a natural resource of singular importance to the nation.

Lately, when asked how the Bay is doing, I have said that the patient is stabilized, and that we are poised on the brink of real recovery. I do not mean to minimize the challenges we face; as I've discussed above, they are formidable. But do we really have any choice?

The Chesapeake Bay lies in the heart of this great nation's mid-Atlantic region. Washington, D.C., the Capitol of the world's last super power, is both geographically

and historically central to the Chesapeake Bay. The fifteen million people who live in the watershed have repeatedly and overwhelmingly demonstrated their commitment to Saving the Bay. In fact, love for the Bay may just be as close as we will come to establishing an environmental ethic.

We have a great federal, state, local partnership at work here on the Chesapeake. The cooperation is historic. We must set our sights high; we must look to restore, not just maintain, the Chesapeake Bay. For if we cannot do it here, with all that we have going for us, we must ask what hope is there for the rest of the planet.

Thank you.

STATEMENT OF JEFFREY COY, PENNSYLVANIA HOUSE OF REPRESENTATIVES, CHESAPEAKE BAY COMMISSION

Mr. Chairman and members of the Committee, my name is Jeffrey Coy and I am a member of the Pennsylvania House of Representatives and Chairman of the Chesapeake Bay Commission. The Commission is a tri-state legislative advisory commission that was created over a decade ago by the legislatures of Maryland, Virginia and Pennsylvania to assist the states in addressing Chesapeake Bay-related issues of mutual concern. The commission is a signatory to the 1983 and 1987 Chesapeake Bay Agreements along with the Governors of Maryland, Pennsylvania and Virginia, the Mayor of the District of Columbia and the Administrator of the U.S. Environmental Protection Agency. Of the six signatories, the Commission is the only signatory representing the legislative branch of government. Functioning as the legislative arm of the clean-up effort, it is the Commission's responsibility to work with both the state legislatures and the Congress on programs to restore Chesapeake Bay. It is in that capacity that I am before you today.

The Commission also provides an important tri-state perspective for the restoration effort. The wisdom and strategies that are exchanged by the delegations from the three states are vital in moving the program forward.

I am honored to be here today as Chairman of the Chesapeake Bay Commission, representing my friends and colleagues from the legislatures of Pennsylvania, Maryland and Virginia and the other members of the Chesapeake Bay Commission to support reauthorization of the Clean Water Act which should include the provisions of the Chesapeake Bay Restoration Act and to emphasize the important role of the federal government as a partner with the states and the District of Columbia in the restoration of Chesapeake Bay.

First, I would like to share a few comments concerning the broader picture—the critical importance of the reauthorization of the Clean Water Act. For almost two decades, the Water Pollution Control Act has been regarded as landmark legislation aimed at improving, protecting and restoring water quality throughout the nation. The Act has served both as a vehicle for providing financial assistance to the states in areas such as the construction and expansion of wastewater treatment facilities and has provided by example the incentive or impetus for many of the water quality programs which we have undertaken at the state level.

We commend you for your foresight in pursuing the re-authorization and strengthening of this vital legislation. Virtually every element of the Clean Water Act enhances and supplements our efforts to protect and restore the Chesapeake Bay. The Act's continued support for sewage treatment plants and controls on toxic pollutants will reap significant benefits in the Bay. I am particularly pleased to see the nonpoint source pollution control provisions of the Act strengthened and reemphasized. We have found, as have other across the nation, the control of runoff and other nonpoint sources, is a vexing and expensive problem. I think it is fair to say that we have made real progress in the Bay region, but continued emphasis at the federal level can only help.

While I am sure the committee is aware of the problems facing Chesapeake Bay, let me briefly review its condition. While we have made significant advances in the 10 years since the first Chesapeake Bay Agreement was signed, it is fair to say that we have a long way to go. We have made progress with significant reductions in the nutrient phosphorus entering the Bay because of a number of initiatives including phosphate detergent bans, improvements in sewage treatment plants and controls on runoff from agricultural and urban lands. Improved water quality in many areas has led to slow but steady improvements in underwater grasses which are vital habitat and nursery areas for a myriad of Bay species. Striped bass, known around the Bay as rockfish, have rebounded. But problems remain: we continue to have difficulty in controlling excess nitrogen, although increase have been slowed, critical habitats such as wetlands are still under pressure and we still need to understand

and remedy toxics problems that exist in the waters and the sediment of the Bay. Our fisheries continue to decline and we face an expanding human population in the watershed that will continue to stress the Bay and its resources.

There are good reasons why we have come so far and why there is reason for optimism about the future. The current Chesapeake Bay Agreement, signed in 1987 and amended in 1992 has provided clear, strong specific and comprehensive goals for the multi-jurisdictional Chesapeake Bay Program and those goals have been embraced by the highest levels of leadership in the region. We have, under the rubric of the Chesapeake Bay Program, brought together not only the states, the district, the commission and EPA but thousands of citizens, scientists, business leaders, local governments, farmers and others to work for common goals. We have been guided by state of the art research and have used a computer model for management that is arguably one the most sophisticated in the world. We have also not rested on our accomplishments. The participants in the Chesapeake Bay Program have not been shy about reassessing our commitments in the face of new scientific evidence and to move to new areas and abandon those that are not productive. We have also recognized that there is not one monolithic approach that works in all areas. With a watershed that spans multiple states and thousands of local jurisdictions, success comes only be recognizing regional difference and therefore the tools we have employed a range of programs that range from regulations to voluntary incentive based programs.

Throughout the Bay region, the environmental professionals, the politicians and the public at large all recognize and appreciate the importance of continued involvement of the federal government in our efforts. Your interest in and support for the Chesapeake Bay has been not only a catalyst, but also an incentive and an inspiration to our state and local governments. The recognition of the Chesapeake Bay as a resource of national significance, and your financial support for this program since 1984 have provided a vital underpinning for this entire effort. It has enabled the states to adopt programs which would not otherwise be possible. The active involvement of EPA and other federal agencies has leveraged hundreds of millions of state and local dollars. The states have taken seriously their obligations and have responded with significant investments of time and money. Since the beginnings of the program in the late seventies and the early eighties federal assistance to the Bay region has grown substantially. It now amounts to more than \$20 million dollars annually, with over 60% of the figure going to on the ground implementation programs. While this money is vital, it is dwarfed by the total expenditures on Bay-related initiatives of states and the District of Columbia. In my own state of Pennsylvania, as in Maryland, Virginia and the District of Columbia, federal money provided by the Bay Program has helped established the groundwork for important initiatives:

Pennsylvania is blessed with a strong agricultural economy, however, excess nutrients produced by agricultural operations have proved to be a major water quality problem for the Susquehanna River and ultimately Chesapeake Bay. Money for the Bay program, some 12 million dollars since 1987 and supplemented by 17 million dollars of state money, has given us the ability to give grants to farmers to install best management practices and build manure storage facilities to help control nutrients. Earlier this year, the Pennsylvania legislature, with the support of both environmental and agricultural interests, adopted landmark agricultural nutrient management legislation which I introduced on behalf of the Pennsylvania delegation to the Chesapeake Bay Commission. I firmly believe that part of the success of that legislation came from the knowledge about and acceptance of farming practices that were funded in part by the Chesapeake Bay Program.

In your considerations of the Clean Water Act and the incorporation of the provisions of the Chesapeake Bay Restoration Act, you will have yet another opportunity to express your support for the type of inter-jurisdictional and interdisciplinary management structure which we have put in place in this region. As you consider the reauthorization of the Clean Water Act, I urge you also to view the Chesapeake Bay as a microcosm of the water quality problems confronting our nation. I am certain that there is no problem unique to the Chesapeake Bay. The Bay's problems are the nation's problems. And therefore, many of our solutions we embrace will benefit the nation.

In closing, I would only say that I cannot emphasize too strongly the importance which the Chesapeake Bay community attaches to your efforts here. I believe that you have before you an opportunity to signal to the citizens of the Bay region, and to the nation at large, your continued commitment to the protection of this nation's most productive estuary. The Chesapeake Bay restoration effort is a state-of-the-art

experiment in environmental protection which deserves and demands your continued support.

Thank you the opportunity to be with you today.

REMARKS TO THE SENATE COMMITTEE ON
ENVIRONMENT AND PUBLIC WORKS
REGARDING THE REAUTHORIZATION OF THE CLEAN WATER ACT

Deputy Secretary Caren E. Glotfelty
Pennsylvania Department of Environmental Resources
August 4, 1993

Mr. Chairman and members of the Committee, my name is Caren Glotfelty, and I am Deputy Secretary for Water Management of the Pennsylvania Department of Environmental Resources. In this position, I am responsible for all water quality and water quantity programs in Pennsylvania, including the Commonwealth's participation in the Chesapeake Bay Program.

I appreciate the opportunity to speak to you today on Senate Bill #1114, concerning reauthorization of the Clean Water Act. I have been asked, specifically to discuss the Chesapeake Bay Program -- The lessons we have learned from the program that should be applied elsewhere and provisions that should be included in this Clean Water Act to insure the continued success of the Chesapeake Bay Program and watershed planning efforts elsewhere.

Although the area in Pennsylvania drained by the Chesapeake Bay occupies only about a third of the Commonwealth's total land, the Chesapeake Bay Program has taken on an importance in Pennsylvania, as it has in the entire country, beyond the geography it directly affects. Since the initial Bay Agreement in 1983, the Chesapeake Bay Program has established itself as the preeminent watershed restoration, protection, and management program in the United States. The Chesapeake Bay Program has been a laboratory for watershed management approaches that are serving as models elsewhere.

Congress had great foresight in 1987, to include specific authorizing language for the Chesapeake Bay Program in the Clean Water Act Amendments. Now that the Clean Water Act reauthorization is again a topic for Congressional action, it is timely to reflect on what we have learned from the Bay Program over the last six years. What has worked well? What are essential elements for continuing success?

WHAT HAVE WE LEARNED FROM THE CHESAPEAKE BAY PROGRAM?

Partnerships with Agriculture are Necessary

In 1987, the signatories to the Chesapeake Bay Agreement committed to reduce the loads of phosphorus and nitrogen (nutrients) entering the Bay by 40 percent by the Year 2000. In Pennsylvania we focused on reducing agricultural sources of nutrients, the primary contributors of nitrogen and phosphorus to the Susquehanna River. To accomplish this challenging task, we built a strong and lasting partnership between the environmental and agricultural communities.

Initially, we relied on a voluntary approach to agricultural nutrient management. Pennsylvania's Chesapeake Bay Program used education, technical outreach, and financial assistance to persuade farmers that nutrient management is not only environmentally responsible, but can be profitable as well. Our partnership with agriculture has led this

year to the passage of Act 6, which requires the preparation and implementation of nutrient management plans by high density livestock farms. This new law was the result of the major farm organizations in Pennsylvania recognizing that nutrient management was essential to the future of agriculture in the Commonwealth, and that a voluntary program alone was not sufficient.

Pennsylvania's nutrient management program, while mandatory, is not a traditional regulatory program. It requires the preparation of a plan which takes into account the farmer's crop needs, soil nutrient content, available manure, and farming practices. The site specific nature of nutrient management planning allows the farmer to integrate appropriate management practices into the normal farming operations.

The program will be administered through the county conservation districts, traditional allies to farmers. I believe that Pennsylvania's example could and should spawn a whole new generation of legislative approaches that rely less on "command and control" and more on shared goals, education, cooperation, and technical assistance.

Local Solutions are Needed to Regional Problems

Another lesson learned from the Chesapeake Bay Program has been the importance of employing strategies to build support at the local level for solutions to regional problems. With the 1992 Chesapeake Bay Agreement, the signatories embarked on the development of tributary-specific strategies. Until that time, most attention in the Program focused on the main bay. It finally became clear that without specific attention to the tributaries -- that is, to activities throughout the entire watershed -- we could not accomplish the task of the 40 percent nutrient reduction agreed to in 1987.

The four jurisdictions that have signed the Chesapeake Bay Agreements -- Maryland, Virginia, Pennsylvania, and the District of Columbia -- vary considerably in their geography, population, development, and in the activities that contribute to the Bay's nutrient problems. Accordingly, their solutions and their priorities must be different. In recognition of this, each of the jurisdictions has spent the last eight months in extensive rounds of public meetings, developing local solutions which are most appropriate and cost-effective in accomplishing the agreed-upon nutrient reductions. The key to the success of these various efforts to accomplish Bay restoration is that they are all tied into the accomplishment of a set of common goals for the Bay and watershed as a whole.

Tangible, Measurable Goals are Essential

From in Chesapeake Bay Program, we also have recognized the value of setting these tangible, measurable goals on a watershed basis. The notion that the Bay could be restored to the water quality of an earlier time through specific numerical reductions in nutrient loadings has had a tremendous effect in capturing and holding the

public's attention. More recently the Program has been able to limit water quality restoration to the return of specific amounts of bay grasses, and is moving toward the ability to scientifically link water quality improvement to the return of other living resources. The power of such tangible goals is such that, even in Pennsylvania, with no Bay shoreline, the public has retained its interest in, and strengthened its commitment to, Chesapeake Bay restoration for more than ten years.

Watershed Planning is Essential for Meaningful Water Quality Improvement

The Chesapeake Bay Program initially focused on traditional concepts of water pollution control. The impacts of air pollution were not well understood. It is now recognized that 25 percent or more of the nitrogen contributions to the Chesapeake Bay come from atmospheric deposition. As such, water quality improvements will require air pollution reductions as well as reductions in point source discharges from industries and municipalities and non-point source discharges and point source from agriculture urban storm water.

The success of the Chesapeake Bay Program is a strong demonstration that integrated watershed planning and management is the direction in which we should be going in all geographic areas. Only through concerted action by all jurisdictions and in all media -- air, water, and land -- affecting this Bay -- will we be able to make this progress necessary to restore living resources to this Bay.

These lessons from the preminent watershed restoration, protection, and management program should be remembered as Congress moves toward the idea of watershed management on a cross-media basis nationwide.

It is also important that any mandated approach to watershed planning and management be flexible. Interstate and intrastate agencies already engaged in effective watershed management should be allowed to continue without interference. New organizations should have this flexibility to design and implement watershed management approaches that fit the needs and circumstances of the resources and jurisdictions involved.

WHAT IS NEEDED IN THE CLEAN WATER ACT REAUTHORIZATION?

Retain Emphasis on Nutrient Reductions

With the first Chesapeake Bay Agreement, in 1983, nutrients were identified as the culprit causing the Bay's decline in living resources. In 1987, although other environmental goals were set, there was a strong and specific emphasis on nutrient reductions. Because we have been somewhat single-minded until now, the jurisdictions have largely targeted their resources toward actions necessary to reduce nutrients. With the 1992 Agreement, the jurisdictions enlarged their perspectives to include the tributaries, but the emphasis remained on nutrients.

As we have learned more about the Bay and its tributaries, we have identified additional problems to tackle including the restoration of Bay grasses, and wetlands, remediation of toxic chemicals trapped in

bottom sediments, and rejuvenation of the striped bass, oyster, and crab fisheries. It has been tempting to declare the nutrient problem well on its way to solution and to move on to other problems. Partly this is because we are impatient for the complete solution, and partly because we are concerned about maintaining the public's focus on and support for the Chesapeake Bay Program.

However, it is clear that achieving the necessary nutrient load reductions will take many years and billions of dollars. For example, preliminary cost estimates for the Potomac River, a major tributary to the Bay, indicate that it may take \$155 million to \$244 million per year for an indefinite period to remove the necessary amounts of phosphorus and nitrogen from point and non-point source discharges to achieve and maintain the 40 percent Baywide load reduction goal. We need to be able to count on sufficient funding to accomplish this goal and cannot afford to have the necessary financial resources or public attention diverted from nutrients until these reductions are accomplished.

Maintain Implementation Flexibility

Perhaps the most critical factor in the success of the Chesapeake Bay Program to date has been the flexibility afforded the jurisdictions who are responsible for implementing the Program in targeting their resources to meet the broad Baywide goals. Although we are all part of a single watershed, Maryland, Virginia, Pennsylvania and the District of Columbia are all very different in terms of the impacts we have on the Bay, the resources we have available to solve Bay problems, and the other priorities we must balance with the needs of the Chesapeake Bay.

The implementation grants to the jurisdictions have been substantial, and more will be required. In Pennsylvania, we have spent most of our \$12 million implementation grants, since 1987, on the agricultural nutrient problem -- with most of the dollars going into cost-sharing best management practices on farms. In other jurisdictions, other priorities have received funding.

It is crucial that this flexibility to the jurisdictions be maintained in the future as we focus more on tributary-specific strategies. This flexibility is essential not only for how we spend our dollars, but in the kinds of solutions we choose. Particular implementation strategies, practices, and techniques should not be dictated to the implementing jurisdictions. Rather, we should continue to be permitted to choose our own approaches to meeting broad Bay goals and to be judged on our performance in meeting those goals.

Emphasize Cost-Effective and Pollution-Preventing Solutions

The Bay jurisdictions should be required to invest in solutions that are the most cost-effective and equitable from a comprehensive standpoint and that emphasize pollution prevention and recycling. Pennsylvania's nutrient management program is a good example of this. Farmers are encouraged to use their manure resources efficiently,

reducing their dependence on expensive chemical fertilizers, which will both help their economics and reduce pollution from improper agricultural nutrient use.

Recognize Competing Priorities at National Level

A final concern to us in Pennsylvania is the need for Congress to understand that there are a number of watershed programs of national priority which are competing for our resources and attention. In addition to our involvement in the Chesapeake Bay Program, Pennsylvania has been an active participant in the Great Lakes Water Quality Initiative and a strong partner in the Delaware Estuary Program. If all of these watershed restoration, protection and management programs are to produce results, and if our many other state level water quality management responsibilities are to be maintained, it is crucial that Congress make its priorities clear, and back them up with adequate financial resources.

In closing, I want to compliment your efforts to date on behalf of the Chesapeake Bay and to express my appreciation on behalf of Pennsylvania citizens. I look forward to your continued support.

Thank you for this opportunity to share my views with you today.

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TESTIMONY OF JOHN ATKIN, CLEAN WATER JOBS COALITION, NORWALK, CONNECTICUT

My name is John Atkin and I am speaking on behalf of the Clean Water/Jobs Coalition which originated in the Long Island Sound watershed area. I will share my experience as a former member of the Connecticut House of Representatives and State Senate for ten years, as founder and chair of the Bi-State Long Island Sound Committee, as one of the founding members of the Clean Water/Jobs coalition, and as person actively involved in Long Island Sound through the Soundkeeper Fund, the National Audubon Society, and other organizations.

I grew up in Norwalk, Connecticut, one of the 98 cities and towns including the boroughs of Queens and the Bronx, that border the Sound. Today, as when I was a youngster, I swim in of New York. Inc. the Sound. I have taught aboard a research vessel on the Sound, about the Sound, to youngsters and adults alike about the 450 species of marine life that inhabit the Sound. I have told my students that the Sound has 577 miles of shoreline, is 110 miles long, and 21 miles wide at its widest point. And I have informed them that 10% of the country's population live within 50 miles of the Sound.

That startling statistic is precisely why the estuary is stressed. Over one billion gallons of inadequately treated sewage pours into the Sound from 44 sewage treatment plants every day. Land development over the last 200 years has filled in nearly 75% of the coastal wetlands that acted as a natural buffer and filter for the runoff into the Sound. Additionally, the construction of roads and parking lots near the Sound speed up the process of oil, salt, trash and animal waste finding its way into the Sound.

The Sound is bordered by two states, and is serviced by two regions of the Environmental Protection Agency (EPA). Connecticut is in Region I, with its office in Boston, and New York State is in Region II with its office in New York City. Senator Lieberman's "Long Island Sound Improvement Act of 1990," was an important step in recognizing the Sound as nationally significant with its own EPA office after models set forth for the Chesapeake Bay and the Great Lakes. This, along with ongoing work of the Long Island Sound Study under the National Estuary Program, the creation of the Bi State Long Island Sound Committee and the citizen alliances and coalitions that have formed are further evidence of Long Island Sound being a priority water-body for the nation.

I stood on the shores of the Sound on Calf Pasture Beach in Norwalk nearly six years ago and called on my colleagues from the States of Connecticut and New York to join together on a formal and regular basis to examine what each state was doing in handling the problems of the Sound, and how the two states could work together. This effort was designed to compliment the programs initiated under the National Estuary Program. I negotiated with the Governor's offices from the two states to ensure Executive Branch involvement in the process. Identical legislation was introduced in both states to form a Bi-State Committee, and after passage, and the signatures of both Governors, the first meeting was held in Stamford, Connecticut. Governor William O'Neil of Connecticut attended and enthusiastically called for renewed action and cooperation between the states, and Governor Mario Cuomo of New York, through a spokesperson, did the same. Since that day, the state's environmental agencies, and legislative representatives have been working closely together to further ensure that the issues dealing with Long Island Sound are addressed equitably on both sides of the state line.

Today, public concern for the Sound continues to be high and major policy decisions are being discussed. In addition to the reauthorization of the Clean Water Act, the draft of the Comprehensive Conservation Management Plan (CCMP) for the Sound under the National Estuary Program has been completed and the public has had an opportunity to comment. Although many of us felt that the Plan fell short of expectations, and are disappointed in the lack of technical discussion, we still realize that without it, and without the National Estuary Program there would be little cooperation among the states. For example, the "no net increase" of nitrogen plan that was adopted by Connecticut and New York probably never would have occurred without it.

The Management Conference of the Sound's estuary program consisted of government agencies, academics, elected officials and citizen representatives. They worked to complete the plan with sections on hypoxia, toxins, pathogens, floatables and living marine resources. The Citizen Advisory Committee of the Sound study was an active participant in the process, and was an integral partner in the development in the final plan.

We need the leadership of this committee to ensure that the federal government remains an active player and financial supporter in the effort to restore our Sound. Specifically, it is essential that the federal government remain a partner in assisting states and municipalities in upgrading adequate sewage treatment facilities in the Sound's watershed. In the Sound, hypoxia is responsible for the lack of life in many parts of the estuary. Only through a federal, state and local partnership can the billions of dollars needed be found.

The continuation of funds in the Long Island Sound estuary to further assist in the establishment of state revolving loan funds must continue. Many Connecticut cities have been hard hit by the recession and massive deficits. In fact, Bridgeport, Connecticut even filed for bankruptcy a couple of years ago to demonstrate the severity of the situation in their city. Federal monies must be tied to priority infrastructure needs identified in the CCMP of the Long Island Sound study under the National Estuary Program. In addition, municipalities are beginning to address growth management issues to ensure new facilities remain in capacity. Long Island Sound is an estuary of national significance, and Congress should play a role in financially supporting long term restoration of the ecosystem.

Finally, I'd like to talk a little bit about Senator Lieberman's bill, S. 815, the Water Pollution Control and Estuary Restoration Act, co-sponsored by Senators Moynihan, Dodd and D'Amato. In the House, Representatives Rosa DeLauro and Nita Lowey have introduced companion legislation (H.R. 1720) with over 60 co-sponsors. I have attached for the record a list of over 100 organizations from the Northeastern United States in support of S. 815, including environmental groups and union and building trade organizations. The reason so much support and leadership within this list has come from the Long Island Sound region, is that without S. 815 becoming part of the Clean Water Act re-authorization, our efforts and plans to clean up the Sound will falter. We need strong federal support to the National Estuary Program for implementation of the CCMP, for continued coordination between state and federal agencies and for the funding levels of S. 815 to bring the SRF program to a level of \$5 billion annually, with special set asides for critical, nationally recognized estuaries like Long Island Sound.

While we are gaining support from organizations everyday from other parts of the country for S. 815, the unique birth of the Clean Water/Jobs Coalition began on Long Island Sound. The coalition began on a confrontational note in the winter of 1992, when, as the Long Island Sound Watershed Alliance was meeting in New York, 1200 union picketers stood outside and expressed concern about their economic survival. As representatives from both sides met, they started talking about cleaning up the Sound, and creating jobs in the process. They also spoke of helping economies that rely on clean water like commercial and recreational fishing, recreation and tourism; and trying to work for development away from sensitive environmental areas while providing the infrastructure to support it. But most important, the theme that truly brought the groups together was that the federal government must pay an equitable share of the clean-up costs. Local, state and federal governments must pay a part of the sewage treatment investment with the federal government taking a leadership role. A Long Island Sound plan which places the entire fiscal burden on implementation on the most vulnerable level of government is destined for environmental and economic failure.

The Clean Water/Jobs platform that developed after this "fortunate" confrontation expanded beyond the Sound, and S. 815 became the coalition's legislative vehicle. Now we have begun to enlist support from environmental leaders,

contractors and unions from around the nation. An overriding emphasis was placed on the National Estuary Program sites and the Great Lakes, whose regions are developing comprehensive management plans for restoration. The platform developed into not just an environmental plan, but a jobs program. A program that according to several studies can result in up to 57,000 jobs for every billion dollars invested. The studies included direct jobs for construction and repair of sewage treatment plant facilities along with indirect jobs by enhancing clean water related economies.

In this country, our clean water infrastructure is just as important as transportation infrastructure which the federal government has been investing approximately \$155 billion over a six year period. Financial support, with an emphasis on innovative approaches, is another exciting aspect of our Clean Water/Jobs coalition and in turn S. 815. It expands the traditional view by showing that funds for non-point source pollution control and wetland restoration can also provide jobs to the region's economy. The Sound Study's CCMP goal is integration of point and non-point pollution sources in a management plan which can maximize environmental and, in turn, economic benefit. Best management practices and new infrastructure ap-

proaches are some examples of innovation for our clean water future, and will need to receive strong federal support.

The coalition of organizations that support this legislation may seem highly unusual at first glance, but it shows what can be accomplished when people communicate and listen to one another. The old adage of jobs vs. the environment, is being replaced. Now environmentalists and the construction industry realize that by working together, jobs, sustainable development and a clean environment are a reality. The support that has formed around Long Island Sound has put the Sound on par with the recognition of other ecosystems such as the Chesapeake Bay and the Great Lakes.

Long Island Sound represents an ecological system with some of the greatest urban population pressures in the nation. A clean Sound makes environmental and economic sense because it can pave the way to solving some of the complex problems facing estuaries around the nation. We in the coalition are proud of the Long Island Sound region's leadership role in bringing together jobs and the environment nationally. We can only hope that S. 815 will become part of the committee's Clean Water Act reauthorization proposal.

I thank you for the opportunity to testify today and I would be pleased to work with this committee and its staff if I can be of assistance.

CLEAN WATER/JOB SUPPORTERS

A Listing of Organizations, Local Governments, Businesses and Unions from Long Island Sound and Neighboring Estuaries who have endorsed S. 815/H.R. 1720—the Water Pollution Control and Estuary Restoration Act

Action	St. James	NY
Action for Pres. & Cons. LI	Huntington	NY
Advocates for the Earth Club	White Plains	NY
American Littoral Soc—NY Chapter	Broad Channel	NY
American Oceans Campaign	Washington	DC
American Rivers	Collinsville	CT
Anacostia Watershed Society	College Park	MD
Appalachia Science in the Public Interest	Lingston	KY
Audubon Council of CT	Cromwell	CT
Baykeeper	Sandy Hook	NJ
Bedford Audubon Society	Mt. Kisco	NY
Bronx Council for Environmental Quality	Bronx	NY
Bronx Council on Environmental Quality	Bronx	NY
C.A.C. Peconic Estuary N.E.P.	Shelter Island	NY
CCIA	Wethersfield	CT
Central Westchester Audubon Society	White Plains	NY
Chesapeake Bay Foundation	Annapolis	MD
CIC/Nassau Suffolk Construction Association	Albany	NY
CIC/Westchester & Hudson Valley	Tarrytown	NY
Citizens Campaign for the Environment	White Plains	NY
City of Groton	Groton	CT
City of New Haven	New Haven	CT
City of New Rochelle	New Rochelle	NY
City of Stamford	Stamford	CT
City of West Haven	West Haven	CT
Clean Ocean Action	Sandy Hook Highlands	NJ
Coalition for Livable West Side	New York	NY
Coalition for the Bight	New York	NY
Coalition—Protection of LI Groundwater	Northport	NY
Coast Alliance	Washington	DC
Connecticut Audubon Society	Hartford	CT
Connecticut Conservation Association	Black Rock	CT
Conservation Law Foundations	Boston	MA
Construction Industry Foundation	White Plains	NY

CLEAN WATER/JOBS SUPPORTERS—Continued

A Listing of Organizations, Local Governments, Businesses and Unions from Long Island Sound and Neighboring Estuaries who have endorsed S. 815/H.R. 1720—the Water Pollution Control and Estuary Restoration Act

Construction Industry Coalition of Westchester & Hudson Valley	Tarrytown	NY
Crackerbarrel Enterprises/Cetacean Int.	Clinton	CT
CT Fund for the Environment	New Haven	CT
CT Laborers District Council	Hartford	CT
Darien Audubon Society	Darien	CT
Delaware Riverkeeper	Lambert	NJ
Downstate Alliance of Heavy Construction	Tarrytown	NY
Environmental Planning Lobby	Albany	NY
Fairfield Town Shellfish Commission	Fairfield	CT
Federated Construction of Westchester County	White Plains	NY
Fisherman's Defense Fund	Glen Cove	NY
Friends of Norwalk Clean & Green	Norwalk	CT
Friends of the Bay	Oyster Bay	NY
Gaia Institute	New York	NY
Garden Club of Old Greenwich	Old Greenwich	NY
GCA of New York, Inc.	New York	CT
General Contractors Association of NY	New York	NY
Greenwich Audubon Society	Greenwich	CT
Harborwatch	Westport	CT
Huntington Audubon Society	Huntington	NY
International Union of Operating Engineers, AFLCIO	New York	NY
John W. Deering, Inc.	Bethel	CT
ads for the Earth	Mt. Vernon	NY
Utchfield Hills Audubon Society	Utchfield	CT
Local 478, IUOE	Hamden	CT
Long Island Baymen's Alliance	Hicksville	NY
Long Island Sound Task Force	Stamford	CT
Lyman Langdon Audubon Society	Port Washington	NY
Menunkatuck Audubon Society	Clinton	CT
Mianus River Watershed Council	Greenwich	CT
Nassau Suffolk Contractors Association	Commack	NY
National Audubon Society	Washington	DC
National Audubon Society—Northeast	Albany	NY
National Utility Contractors Association	Arlington	VA
National Water Council/National Water Funding Council	Boston	MA
Naugatuck Valley Audubon Society	Derby	CT
New York City Audubon Society	New York	NY
New York Coastal Fisherman's Association	Bronx	NY
North Country Garden Club of LI	Glen Head	NY
North Fork Environmental Council	Mattituck	NY
Norwalk Woman's Club, Inc.	Norwalk	CT
NY/NJ Harbor Estuary Program	New York	NY
NY Public Interest Research Group	Huntington	NY
NYS Trawlers Association	East Setauket	NY
Preserve the Wetlands, Inc.	Norwalk	CT
Quinnipiac River Watershed Association	Meriden	CT
Regional Plan Association	New York	NY
Regional Plan Association—CT	Stamford	CT
Residents for More Beautiful Port Washington	Port Washington	NY

CLEAN WATER/JOBS SUPPORTERS—Continued

A Listing of Organizations, Local Governments, Businesses and Unions from Long Island Sound and Neighboring Estuaries who have endorsed S. 815/H.R. 1720—the Water Pollution Control and Estuary Restoration Act

Sagamore Rowing Association	Glenwood Landing	NY
Saugatuck Valley Audubon Society	Westport	CT
Save the Bay, Inc.	Providence	RI
Save the Peconio Bays Inc.	Mattituck	NY
Scarsdale Audubon Society	Scarsdale	NY
Sierra Club—CT Chapter	Greenwich	CT
Sierra Club—New Haven Group	New Haven	CT
Sierra Club—Northeast Region	Saratoga Springs	NY
Soundkeeper	Norwalk	CT
Sounds Conservancy, The	Essex	CT
Sound Watch	Mamaroneck	NY
Soundwatch Inc.	City Island	NY
Stamford Carpenters Local Union #210	Norwalk	CT
Town of Cromwell	Cromwell	CT
Town of Deep River	Deep River	CT
Town of Essex	Essex	CT
Town of Greenwich	Greenwich	CT
Town of Groton	Groton	CT
Town of Guilford	Guilford	CT
Town of Huntington	Huntington	NY
Town of Lyme	Lyme	CT
Town of Madison	Madison	CT
Town of North Haven	North Haven	CT
Town of Shelter Island	Shelter Island	NY
Town of Southold	Southold	NY
Trillium Garden Club	Groton	CT
Udall's Cove Preservation Committee	Douglaston	NY
United Auto Workers, Region 9	Buffalo	NY
Utility Contractor Association of New England	Quincy	MA
Village of Larchmont	Larchmont	NY
Village of Mamaroneck	Mamaroneck	NY
Westchester Land Trust	Bedford Hills	NY
Wildwood Lake Association	Riverhead	NY

List compiled as of August 4, 1993. For further information contact 581-869-9731—David J. Miller, National Audubon Society, 1789 Western Avenue, Albany NY 12203.



TESTIMONY OF

PAUL W. HANSEN

DIRECTOR, MIDWEST OFFICE, IZAAK WALTON LEAGUE OF AMERICA

**PERTAINING TO: THE CLEAN WATER ACT AND THE MISSISSIPPI RIVER
BEFORE THE SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE
UNITED STATES SENATE, WASHINGTON, D.C.**

AUGUST 4, 1993

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Mr. Chairman, Honorable members of the committee, I am Paul W. Hansen, director of the Midwest Office of the Izaak Walton League of America (League). As you may know, the League has been deeply involved in Mississippi River conservation issues since 1924, when League-sponsored legislation that established the Upper Mississippi National Wildlife and Fish Refuge was passed by Congress. The pen that President Coolidge used to sign that bill is displayed in my office today.

The Father of Waters

The Mississippi River is the dominant watershed of the North American continent, and the second largest drainage basin in the world. The mighty Mississippi:

- stretches 2,358 miles from Minnesota to the Gulf of Mexico;
- borders 10 states;
- drains an area that covers more than a million square miles, including all or parts of 33 states and 2 Canadian provinces;
- provides the major source of inflow into the Gulf of Mexico.

The Upper Mississippi River System includes nearly 1,300 miles of commercially navigable portions of the Upper River north of Cairo, Illinois. The Upper Mississippi has been officially recognized by the Water Resources Development Act (WRDA) of 1986 as both a nationally significant ecosystem and transportation system. From the mouth of the Ohio River to the Gulf of Mexico, the Lower Mississippi stretches almost 1,100 miles.

The Mississippi's Resources

The Mississippi River is considered one of North America's greatest environmental resources, with its channels, river lakes, backwater ponds, sloughs, wetlands, bottomland hardwood forests and adjacent valley lands.

The Mississippi River is home to a vast inventory of fish and wildlife:

- 241 species of fish, including representatives of some of the most ancient lineages of freshwater fishes (gars, sturgeons and paddlefish) and estuarine species that regularly enter the river's lower reaches;
- the river's corridor is a major flyway for neotropical migratory birds and is used by up to 40 percent of North America's waterfowl and wading birds;
- the Upper Mississippi National Wildlife and Fish Refuge, which runs from Wabasha, Minnesota, to Rock Island, Illinois, is home to 270 bird species during all or part of the year;
- 50 mammal species live on and along the river;

- original forested wetlands associated with the River covered about 21 million acres -- less than 5 million remain.

High public demands for use of the River's natural resources are burgeoning in many areas, especially near larger towns and metropolitan areas. For example, the Upper Mississippi River National Wildlife refuge reports 3.5 million visits annually -- more than the visits to Yellowstone National Park. The Upper Mississippi alone generates revenue from recreational and associated uses that exceeds \$1 billion annually. Waterfowl hunting in the flyway is valued at \$58 million annually, and sport fishing on the Mississippi is valued at well over \$100 million.

Threats to the River

Despite these values and many others, the Mississippi River is being severely degraded by a combination of human impacts, including:

- point source pollution from industry;
- nonpoint, polluted runoff from farms and cities;
- operation and maintenance of the navigation system;
- movement of tows and recreation craft;
- development along the river and in the watershed;
- destruction of filtering wetlands;
- energy development.

Point source pollution is a serious problem, especially on the Lower River where the states from Arkansas to Louisiana are home to many of the country's most polluting industries. On the Upper Mississippi, polluted runoff from urban areas and agricultural lands are considered a greater problem. This nonpoint, polluted runoff into surface waters and groundwater, is the problem that the Clean Water Act has been least effective in addressing. The most severe problems attributed to polluted runoff in the UMR are excessive loadings of sediments and suspended solids, nutrients, and contamination from toxic materials, including pesticides and heavy metals. Goals for pollutants established by the federal EPA and state governments are not protecting the River. River ecosystems are in serious decline despite the fact that the states are not reporting widespread or persistent exceedances of current numeric water quality standards.

Nutrient enrichment and sedimentation from contaminated runoff is certainly the single largest environmental problem on the river. The river currently contributes unnaturally high levels of nutrients to the warm waters of the Gulf of Mexico -- much of this originates from agricultural sources in the Upper Mississippi basin. This nutrient enrichment is largely to blame for development of large, oxygen-depleted "anoxic" areas, also known as "dead zones" in the Gulf, which are responsible for massive fish kills that threaten the Gulf's \$780 million/year fishery.

The River's political geography is to blame for a big part of its problems. Because it flows between the states, the Mississippi is often neglected. Several coordinating mechanisms exist to help states work together and with the federal government on various Mississippi-related problems. However, these entities generally have limited or no authority to take action on their own. They perform an important role, but have not provided the strong or unified leadership needed to address the River's complex problems.

The Mississippi River is Being Mismanaged

While the floods of 1993 would have been devastating to human development on the historic floodplain under any river management scheme, they have clearly been made worse by the drainage of wetlands, the channelization of the river and the proliferation of levees. The extensive damage caused by these floods serves to highlight the fact that the U.S. Army Corps of Engineers has continued to manage the Mississippi in a manner that sacrifices the multiple purposes of river management -- including flood control, environmental management, and recreation -- to the single purpose of navigation.

Let me give you just one good example, but by no means the only one. In March of this year, without any specific request by Congress to do so, the Corps announced the beginning of a \$33.6 million "feasibility" study on \$4.8 billion in navigation capacity expansion measures identified by the Corps as their "preferred alternative" in their "Upper Mississippi River Navigation Study Reconnaissance Report." This is the most expensive navigation capacity expansion ever considered and would include the addition of 1200-foot locks at up to 16 of the 35 locks and dams on the Mississippi and Illinois River systems. This will be in addition to \$80 to \$90 million per year that the taxpayers already spend on this archaic, environmentally destructive and unreliable means of transport. The Office of Management and Budget described waterway transport as the most heavily subsidized mode of transporting goods; it is also the most unreliable. It is closed most of the winter, is closed during floods and is closed on a regular basis by accidents at the locks.

The supposed advantages of waterway transport have been vastly overstated by the barge lobby, as was documented in a recent study by the University of Iowa's Public Policy Center, Transportation and Iowa's Economic Future. This study points out that: "It is significant that even with a major subsidy, the cost of shipping grain from Iowa elevators to New Orleans is only marginally cheaper by barge than by rail." The only real effect of the massive subsidy is that it keeps shipping prices about 10 cents a bushel lower for farmers who live within about 100 miles of a waterway. No one has explained why the taxpayer should provide these farmers with this extra subsidy, but the University of Iowa study suggests

that if the purpose is to provide cheap transportation for these farmers, "direct support subsidies to farmers are likely to be more cost effective than massive public expenditures on locks and dams."

The study concludes:

-- "It is not prudent to make costly investments when great uncertainty enshrouds the forecast that govern the economic feasibility of these investments."

-- "In the case of large-scale capacity enhancements of locks and dams on the Mississippi River, the large costs and uncertain demand argue against advocating these investments at present."

The study also points out that "none of the locks and dams had traffic volume in 1987 even approaching its capacity," and that "additional demand that does develop can be met by peak pricing or railroads." In other words, the project is not needed.

Require a National Academy of Sciences Study of the Management of the Upper Mississippi

I am here today, not to tell you that I have all the answers to the management questions raised by the flood waters, but to tell you that we need answers to these questions before we embark on the enormous federal spending that will be required to restore the Mississippi in the aftermath of the flood and the even greater long-term spending that the Corps proposes for navigation expansion. I am here with one simple suggestion and request, that you require in the Clean Water Act that the Corps divert a significant portion of their \$33.6 million navigation "feasibility" study to contract an independent analysis of the management of the Mississippi with the National Academy of Sciences. This report can then be used by Congress and the President to determine the most cost-effective means of managing the Mississippi in the future -- for flood control, for the environment, and for navigation. Such a comprehensive and independent study could be completed for a fraction of the \$33.6 million now being spent by the Corps on "feasibility" studies for the single purpose of a major navigation capacity expansion -- a project that is deemed "unwise" and "not justifiable" by the only independent and academic analysis that it has been given (by the University of Iowa Public Policy Center).

We believe that the Mississippi River is being seriously mismanaged by the U.S. Army Corps of Engineers and that an independent review of the river's management is essential before massive expenditures are made.

IWLA Recommendations for Changes in the Clean Water Act That Would Benefit the Mississippi River

The League is involved with a number of efforts to protect the Mississippi River. The changes that we think would do most to benefit the Mississippi River include:

* **Providing a special designation for the Mississippi River.**

In previous revisions of the Clean Water Act, Congress has provided special designation for the nation's largest lake system and the nation's largest estuary. Special status for the Great Lakes and the Chesapeake Bay have vastly improved the management of these water bodies. It is time to extend this to the nation's largest river system.

* **Encouraging a watershed-based approach to protection and restoration of waterbodies.**

To be successful, efforts to protect and restore the Mississippi and most other waterbodies must be based on watershed strategies that account for land uses in the watershed and their downstream impacts. Water quality protection efforts in this country are moving in this direction, and changes are needed in the CWA and its programs to reinforce this approach.

* **Dealing more effectively with polluted runoff.**

Current totally voluntary approaches to nonpoint source problems are simply not working in the Mississippi basin. The country needs to lean more toward limited regulations that will provide the enforcement tools necessary to back up other approaches. Possible watershed-based models for dealing with polluted runoff more effectively are the new Coastal Zone Act Reauthorization Amendments (CZARA) to the Coastal Zone Management Act (CZMA), which attempt to encourage coastal states to take a more active approach to addressing nonpoint source threats, and the proposed Oberstar polluted runoff bill, H.R. 2543.

* **Strengthening wetland protection.**

The 404 wetlands sections of the current Clean Water Act must be revised or completely restructured to provide increased protection to wetlands, including taking cumulative losses into account.

* **Fostering citizen participation.**

A certain amount of Section 319 Nonpoint funds should be allocated to fund volunteer water monitoring programs that build citizen awareness, knowledge and support for their waterways. In addition, an urban watershed restoration project is needed to assist citizens groups in urban areas where low-income and ethnic minorities often use dangerously polluted sections of the River and its tributaries for subsistence fishing and other purposes.

* **Improving procedures for setting standards.**

Standards should incorporate meaningful biocriteria that indicate the health of ecosystems much more effectively than numeric standards. In addition, better coordination of monitoring

and standard setting is needed that considers cumulative impacts and overlapping permitting by multiple jurisdictions.

* **Strengthening enforcement of current Clean Water Act provisions.**

Enforcement of the Clean Water Act should be strengthened by establishing mandatory minimum penalties for serious violations, based on current U.S. EPA and New Jersey Clean Water Enforcement Act definitions that reduce economic gains enjoyed by violators. In addition, discharge reporting and inspections should be increased, and current obstacles to citizens suits removed.

* **Restoring aquatic ecosystems.**

The National Research Council's report Restoration of Aquatic Ecosystems (National Academy Press, Washington, DC, 1992) should form the basis for the design of a national aquatic ecosystem restoration strategy. Aquatic ecosystem restoration projects should be designed to sustain and enhance the diversity of native species and ecological communities on a regional scale.

Let us make the suffering from the floods of 1993 the springboard for a new era of improved management of the Mississippi. We appreciate your consideration of our recommendations.

TESTIMONY OF MARCY KAPTUR, A REPRESENTATIVE IN CONGRESS FROM
THE STATE OF OHIO

Thank you, Mr. Chairman, Senator Metzenbaum, and members of the Subcommittee, for the opportunity to testify before the Subcommittee today. The Clean Water Act is a critical piece of legislation for the Great Lakes region. Twenty years ago, when the Clean Water Act was first enacted, Lake Erie's condition was so bad that it was given up for dead. The Clean Water Act with its sewage treatment standards and grants, and water quality standards and permit requirements effectively resuscitated this irreplaceable resource. But Lake Erie, as the rest of our nation's large fresh water bodies, is still far from healthy and self-sustaining. We have not met the goal of "fishable and swimmable" waters in many areas. More work needs to be done.

In addition, we have learned much along the way about environmental protection, and what works and what does not work. That is why I am particularly pleased that we will be working on reauthorizing the Clean Water Act in this Congress. From my position on the House subcommittee that determines the appropriations for the Environmental Protection Agency (EPA), I am aware of how limited our resources are for tackling this huge problem. However, we cannot afford to have anything less than the most up-to-date and effective water quality protection in our country.

Today, I would like to provide my comments on the Metzenbaum-Glenn Great Lakes Clean Water Amendment which I wholeheartedly endorse. I would like to do so by discussing specific issues, drawing on some examples of clean water needs in my district.

The Great Lakes comprise the world's largest fresh water system, and contain 95% of this nation's fresh surface water. That's a big resource and a big responsibility. The Great Lakes are also fragile. They sustain extensive use by manufacturers, the maritime industry and recreational users. The Great Lakes are the repository for water that runs-off a huge area of land; the basin as a whole is roughly the size of the former West Germany. In addition, the Great Lakes system has an exceedingly slow flush rate. That is, it takes centuries for water to move from Lake Superior through the system to the St. Lawrence River and ultimately to the Atlantic Ocean. The flushing rate of Lake Superior alone is some 200 years. Lake Michigan's retention time is 100 years. Lakes Erie's rate is shorter because it is so shallow, at 3 years.

The special features of the Great Lakes create special water quality protection needs within the basin. However, some of our most pressing concerns are shared by the nation, namely, sewage treatment, toxic discharge reduction, and nonpoint source pollution control. I would like to begin by emphasizing our stake in these national policy concerns but I will focus my remarks on the more specific Great Lakes needs addressed in the Great Lakes Clean Water Amendments Act, especially contaminated sediments and pollution prevention. I also would like to stress my concern over the North American Free Trade Agreement (NAFTA).

CONTAMINATED SEDIMENTS IN THE GREAT LAKES

As for the rest of our nation's fresh waters, the EPA estimates that a full 75% of the new loadings of certain contaminants into the Great Lakes is from diffuse sources of pollution. These sources include, broadly speaking, atmospheric deposition of toxic substances, leachate from contaminated sites and runoff. Fortunately, a provision in the 1990 Clean Air Act, entitled the Great Waters program, will go a long way toward identifying impact of and abatement needs for atmospheric deposition of toxicants of the Great Lakes. However, leachate of contaminants from 'pollute' sites and runoff fall very much under the jurisdiction of the Clean Water Act, and in both cases, more needs to be done.

Contaminated sediments and other in-place pollutants are gaining increasing attention as sources of contaminants into the Great Lakes. Contaminated sediments are one of the largest pollutants the western basin of Lake Erie. They introduce contaminants into the food chain that accumulate to dangerous levels in fish and of wildlife. These polluted sites impede harbor uses and redevelopment of old industrial sites. In short, the sooner we get a handle on cleaning these areas up, or effectively containing the contaminants the better. We are already overdue in our efforts to take care this public health, environmental and economic problem.

The Great Lakes Clean Water Amendments Act provides a comprehensive program for addressing the special problems within the Great Lakes basin created by contaminated sediments. Sediment clean-up, prevention and improvement in our day-to-day management practices are all part of the solution to this huge environmental problem each is significantly improved by the Great Lakes measure.

I strongly endorse the provision within the Great Lakes Clean Water Amendments which reauthorizes and updates the Assessment and Remediation of Contaminated Sediments Program (ARCS). It is companion language to my colleague Eric Fingerhut's legislation introduced on June 30th. As you know, the program demonstrates sediment remediation technologies on the pilot scales at 5 Areas Concern. In Ohio, this program has been demonstrated at the Ashtabula Area of Concern. The second phase will authorize more sediment treatment technology demonstrations at the pilot and full scale. It will also include technical assistance and outreach to communities beset with contaminated harbors around the basin. Perhaps it should be further expanded to include a jobs program could be conducted in cooperation with the region's universities assist students in entering the field of pollution remediation.

Agricultural run-off is the number one water quality problem in northwest Ohio. Conservation tillage has gained acceptance in part due to the federal cost share funds (Section 319 non-point source pollution grants) that were made available for the purchase of conservation tillage equipment, and due to profitability of no-till farming. The program has worked extremely well in my district. Water quality testing has shown some reduction in phosphorus levels but the sediment, nitrate, and pesticide loads remain high. *To achieve these necessary reductions, additional incentives are needed to encourage the agricultural community to practice conservation tillage, and reduce its use of fertilizers and pesticides.* Stream bank buffers, windbreaks, cover crops, wetlands, and practices such as crop rotations that result in reduced chemical applications improve our environment. The federal government must continue to help the states and regional agencies solve these problems.

I would like to express my strong support for the Great Lakes Sediment Reduction provision of S. 1183, authored by Senator John Glenn. This measure was included in last year's Water Resources Development Act. but dropped from the final version. The measure requires the Corps of Engineers to work through the EPA to develop Tributary Transport Models of soil run-off for each major river system feeding a Great Lakes harbor. The task of developing models is not as monumental as it may sound since the Corps, the Soil Conservation Service and the United States Geological Survey already have substantial data on some rivers. However, a further development and compilation of this is exactly what the Great Lakes basin needs to identify high priority watersheds for intensive nonpoint pollution abatement work. We also need this information for our Lakewide Management planning process. Bedload material from rivers is a major transport medium for pollutants entering the Lakes, yet currently it is not accounted for in our lakewide mass balance efforts. The grants provision contained in this section promises to save federal dollars through reducing the loadings of sediments that require dredging each year in the Great Lakes Basin. We spend over \$33 million annually on dredging. Prevention will save money and improve water quality.

POLLUTION PREVENTION

Senators Metzbaum and Glenn included language in their Great Lakes Clean Water Amendments Act which would provide technical assistance and incentives to industry and municipalities in the Great Lakes region to implement pollution prevention and source reduction practices. Mr. Chairman, I like this language so much that I will be introducing similar legislation in the House this week.

Pollution prevention is often the most efficient way for industry and municipalities to achieve the water quality standards that are necessary to protect the Great Lakes but the up-front investment and technical uncertainties can create difficult initial barriers. The Great Lakes Pollution Prevention for Industries language serves the dual purpose of helping to demonstrate modernizing environmental technologies and practices, and to increase the extent to which pollution prevention practices become part of the Best Available Technologies found on factory floors.

The Pollution Prevention for Cities program, authored by Senator Glenn, provides technical and financial assistance to communities seeking the most cost-efficient and environmentally effective ways of cutting pollution in run-off, wastewater and stormwater. Both programs are especially important to the Great Lakes because our regulated community will soon be going the extra mile of environmental protection in compliance with the Great Lakes Water Quality Guidance.

Mr. Chairman, while sediment contamination and pollution prevention are two areas of special concern to me and my district, I reiterate my full support for all the provisions of the Great Lakes Clean Water Amendments Act. I look forward to working with you and your Committee to gain enactment of this important measure.

Mr. Chairman, I also endorse the Great Lakes Clean Water Amendments provision clarifying the relationship between the Corps of Engineers and the EPA in day-

to-day dredge spoil management activities in the Great Lakes basin. Sediment management is not a simple matter, and there are legitimate differences of opinion among agencies of the federal government, and between federal and state agencies, over the best way to carry it forth. However, without a clear line of authority between agencies over decisions with respect to environmental acceptability of dredge spoil management practices, real problems can result.

The worst example was in my own home Port of Toledo. A disagreement between the Corps of Engineers and the EPA-endorsed State EPA position nearly shut down the port. Through a team effort on the part of Senators Glenn and Metzenbaum, the Governors Office, and myself, we now have a constructive process of sediment management planning and interagency coordination in our watershed. The Great Lakes Clean Water Amendments will prevent future disputes, and hasten the same constructive approach in other watersheds.

NAFTA-RELATED CONCERNS

North American Free Trade Agreement (NAFTA)—related discussions, budget initiatives, and legislative proposals related to the environment have focused primarily on southern border initiatives, that is U.S./Mexico. The Fiscal Year 1993 appropriations for the Environmental Protection Agency (EPA), for example, provided over \$200 M to address U.S./Mexico border environmental and infrastructure needs in preparation of NAFTA. The Fiscal Year 1994 proposal included \$161 M in EPA funding to help the South prepare for NAFTA. All of these monies would be obtained from general revenues.

A House proposal by Representatives Wyden and Richardson would create an additional Border Environmental Fund (BEF) and provide bonding authority to a North American Commission on the Environment. This Fund is proposed for clean-up of existing contaminated sites, construction of new environmental infrastructure, and adoption of pollution prevention practices exclusively on the U.S./Mexico border. A Richardson-only proposal would create a guaranty fund also restricted to southern border needs.

In fact, it is incorrect to assume there is only a southern-border need to prepare for NAFTA. The northern border—U.S./Canada—has profound environmental needs associated with free trade, deriving in large part from the region's need to adapt its economic base. In particular, the region will need to accomplish clean-up of its lakes and toxic hot spots, harbors and old industrial areas to promote necessary economic diversifications; and it will need to retrofit its aging manufacturing facilities with pollution prevention technologies and practices to remain competitive in a free trade environment given the relatively stringent environmental standards of the Northeast and Midwest region of our country.

Moreover, northern border communities often face these needs—along with worker retraining, and transportation infrastructure development—in a context of diminishing wealth, as a consequence of industrial relocation to the south. The region faces diminishing political resources as population also moves southward. In contrast, southern border localities will address their needs in the context of increased economic activity and political clout within their region.

A 1988 EPA survey estimated that the eight Great Lakes states would need to invest an additional \$27 billion by the year 2008 for municipal wastewater treatment improvements; these states must complete more than 700 projects to ensure that municipalities meet at least secondary treatment standards.

In addition, 42 Areas of Concern have been identified in the Great Lakes basin which have large concentrations of toxic pollutants. Effects of toxic pollution that have been measured in the Great Lakes include health risks to humans along with deformities, tumors, and reproductive disorders in all types of wildlife.

Budget initiatives drawn from general revenues convert a proposed trade agreement into an "aid agreement"; they provide direct aid to the U.S./Mexico border, and indirect aid to the polluters who are responsible for the contamination that these monies will rectify. Such initiatives do not reflect the "polluter pays" system that applies to the rest of the nation as it copes with sewage treatment infrastructure needs and clean-ups of contaminated sites.

NAFTA-related commissions and mitigation funds should be "border-blind" if they are truly intended to facilitate free trade; and expenditures should be based on technical trade related criteria rather than broad untested assumptions about geographic need.

The attached information indicates the overall funding requested by the Clinton Administration for environmental initiatives associated with the NAFTA in FY 1994. As indicated, \$150 million is requested for construction grants for wastewater and drinking water projects within EPA's budget. This funding is all in the form of

grants as opposed to loans. As you know, the regular funding that is appropriated to States through the State Revolving Loan Fund is in the form of loans, and a 20% match by the States is also required.

As you know, \$70 M was requested in the FY 1994 EPA budget for construction of the Tijuana wastewater treatment plant which will be located in the United States but treats Tijuana sewage. The authorization for appropriations for the plant was included under Section 510 of the Clean Water Act of 1987. The FY 1993 VA, HUD and Independent Agencies Appropriations bill capped the amount that could be appropriated for the plant at \$239.4 million—the current estimated EPA responsibility. \$124.2 M has been appropriated through FY 1993. The House FY 1994 VA, HUD and Independent Agencies Appropriations bill includes \$35 million for this project.

The House VA, HUD and Independent Agencies Appropriations bill has set aside \$500 million in non-earmarked funds which cannot be spent until March 31, 1994. These funds are intended to be used for wastewater treatment needs for hardship communities. Eligible projects must be authorized by the Public Works and Transportation Committee prior to March 31, 1994 to qualify for the funds. Projects that were requested by President Clinton and not funded include \$50 million for a grant to Texas for colonies projects; \$10 million for a grant to New Mexico for colonias projects; and \$20 million for architectural and engineering activities in Nogales, New Mexico and Mexicali, Mexico. The \$50 million and \$10 million require a one to one state match by Texas and New Mexico. The match for the \$20 million will be based on an agreement between the International Boundary Water Commission (IBWC) and the States that have the border projects. Therefore, there is not specific designation in the EPA budget for cost sharing for the \$20 million. This funding would all be in the form of grants.

Most recently, to address the need that all EPA projects must be authorized in order to receive access to the \$500 million account, House Agriculture Committee Chairman Kika de la Garza introduced legislation to authorize EPA funding for the construction of water and wastewater projects serving communities, including colonias, along the U.S. Mexican border. H.R. 2545 would authorize EPA to make available wastewater construction grants to the colonias and H.R. 2546 would authorize EPA, acting through the State Department, to provide financial assistance for joint U.S.-Mexico projects to construct or improve wastewater treatment facilities.

In addition, the Agriculture Appropriations conference also addressed Clean Water related issues with the funding for Rural Water and Waste Disposal loans and grants. These programs help low income rural communities meet federal and state mandated service standards including the Clean Water Act. The Conference Report will include approximately \$500 million for rural water and waste disposal grants, with \$25 million earmarked for the colonias on the U.S./Mexico border.

I would like to urge you to keep in mind the needs of the northern border in any of your action on the Clean Water Act or separate pieces of legislation addressing wastewater treatment needs. I do not argue with the fact that pollution along the U.S./Mexican border is horrendous. However, I believe that all areas of the country should be treated equitably.

As you move to reauthorize the Clean Water Act, I hope that you will consider initiatives that will benefit the Great Lakes region. I look forward to working together in this endeavor.

Thank you, Mr. Chairman, for consideration of my testimony.

TESTIMONY OF ERIC FINGERHUT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO

Mr. Chairman, thank you for the opportunity to testify before the Subcommittee today as its distinguished members consider reauthorization of the Clean Water Act. I am here today as a strong advocate of federal programs to protect and enhance our Great Lakes resources to the benefit of the environment and the economy. In fact it was the history of pollution in the Great Lakes, highlighted by the much publicized "death" of Lake Erie and the Cuyahoga River catching fire, that strengthen the resolve of Congress to craft and pass the first Clean Water Act in 1972. The results were dramatic. The removal of conventional pollutants such as phosphorous and untreated wastewater effluent brought Lake Erie back from the dead and breathed life into our economy. The Great Lakes now supports a \$4.5 Billion annual sportfishing economy and Lake Erie stands as the first example of environmental controls reclaiming a large natural resource.

Overall Lake Erie alone boasts a recreational economy that generates \$8.5 Billion annually and supports an estimated 152,000 jobs. If approached wisely, federal in-

vestment to clean up and protect the Great Lakes will sustain economic opportunities for generations to come. Unfortunately, the easy work is behind us.

Historical pollution found in the sediments of Great Lakes rivers and harbors remains a severe impediment to our shipping and recreational opportunities, threatening fish and wildlife resources and placing human health at risk. Federal, state and local work throughout the Great Lakes Basin during the last two decades has demonstrated unprecedented leadership for scientific understanding of natural resources, positioning the Great Lakes as an "environmental laboratory" in which to implement an ecosystem approach to resource management as mandated by our Great Lakes Water Quality Agreement with Canada.

It is appropriate that today, as this committee considers the merits of a regional approach to environmental management, that we reflect on the sustained leadership that the EPA and other agencies have shown within the Great Lakes Basin. Federal interagency work within the Great Lakes represents the most comprehensive, multi-media environmental effort within the United States. However, much has been learned since the 1987 Amendments to the Clean Water Act that formally established the EPA's Great Lakes National Program Office.

I am honored to work with the distinguished Senator from Ohio, Howard Metzenbaum, to craft amendments to the Clean Water Act that will refine valuable lessons learned over recent years and refine them to provide resources and direction to the EPA to assure that past program investment and our vision for the future of the Great Lakes are joined in an enhanced initiative.

Mr. Chairman, as you know, Senator Metzenbaum has joined with other Great Lakes Senators to introduce S. 1183, a package of Great Lakes amendments for the Committee's consideration. On the House side I have worked with other Great Lakes members, including Congresswoman Kaptur, to introduce a number of bills that we will present as a comprehensive Great Lakes package to Chairman Mineta of the House Public Works Committee this Friday. I would like to speak of two bills of special interest.

The "Great Lakes National Program Act" seeks to augment efforts in the Environmental Protection Agency's Great Lakes National Program Office by reauthorizing EPA's Assessment and Remediation of Contaminated Sediments (ARCS) program. The program was originally authorized in the 1987 amendments to the Clean Water Act for five years to demonstrate innovative technologies for the removal of contaminated sediments in Great Lakes rivers and harbors. These "pilot scale" efforts were successful and now require demonstration at the "full scale" to ensure their effectiveness in large scale sediment removal actions.

Additional provisions in the Great Lakes National Program Act direct the EPA to conduct assessments of contaminated sediments at all U.S. Areas of Concern identified by the International Joint Commission and to recommend remediation technologies at each site in a report to Congress. Deadlines for the development of Lake Wide Management Plans are also included in the bill.

The second bill is entitled the "Great Lakes Federal Effectiveness Act." Its purpose is to provide for a higher level of coordination among federal research efforts to avoid duplication and ensure the most effective product with the limited research dollars available.

The bill will establish a Great Lakes Research Council comprised Of the top federal research managers in the Basin. They will be charged with producing an assessment Of current research knowledge to identify our research shortfall from meeting the goals of the U.S.-Canadian Great Lakes Water Quality Agreement and reporting the goals to Congress. This information will provide the basis for a prioritization of research efforts by identifying both long and short-term research goals. The development of a uniform, multi-media, data collection protocol for adoption across the Great Lakes Basin will also be advanced.

Mr. Chairman, the modest federal investment to continue these important programs with additional authorities will help continue the reclamation of our Great Lakes environment, protect human health and insure that the economic underpinning of our region's economy, the Great Lakes, will continue to sustain our livelihood well into the future. Thank you.

STATEMENT OF SONNY CALLAHAN, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF ALABAMA

Mr. Chairman, I appreciate having the opportunity to testify today in support of H.R. 1899, the Gulf of Mexico Economic and Environmental Protection Act of 1993, that I introduced with my colleague, Greg Laughlin, and others. We would prefer

that the measure move as a free-standing bill, but if that is not possible, we would urge the committee to consider incorporating it into the Clean Water Act Reauthorization.

The Gulf produces approximately 40% of the U.S. commercial fish yield and provides critical habitat for 75% of the migratory waterfowl traversing the country. Gulf ports handle 45% of U.S. import-export shipping tonnage and offshore drilling there accounts for 90% of U.S. production. Recreational opportunities abound and tourism in the Gulf States contributes significantly to their economies.

Two-thirds of the contiguous United States drains into the Gulf of Mexico so it is under some stress. Many shellfish-growing areas have been closed in recent years because of health-related concerns. While warning signs have been sounded in recent years, the government has focused most of its attention on the Great Lakes and the Chesapeake Bay. Those bodies of water are certainly important to the nation, but the Gulf of Mexico is 190 times larger than the Chesapeake and seven times larger than the Great Lakes. Our bill simply formalizes the Gulf of Mexico program to ensure that this highly productive national treasure receives the support it deserves.

The Gulf of Mexico Economic and Environmental Protection Act creates a multi-agency executive board, to be Chaired by the EPA Administrator. Each Gulf State Governor (or designee) will serve on the Board, along with the Chairperson of the Citizens Advisory Committee and a resident of a coastal county from each state. The function of the board will be to develop a comprehensive joint plan for the actions necessary to address economic and environmental problems of the gulf.

The Gulf of Mexico belongs to all Americans, not just those of us fortunate enough to reside on it. It feeds the nation and fills its energy needs. All of us should be appreciative of its contributions and give it the recognition it merits. I am convinced that legislation is necessary to ensure that real progress is made in the Gulf. I will be pleased to work with the subcommittee if it feels H.R. 1899 needs changes, but I do urge you, Mr. Chairman, to move forward with a meaningful Gulf of Mexico bill.

Thank you again for scheduling this hearing on a subject that is of such importance to my district.

STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM THE STATE OF NEW MEXICO

Thank you Mr. Chairman for the opportunity to say a few words today about Wastewater Treatment Needs and the Clean Water Act.

First I want to bring to your attention the plight of colonias. Colonias are communities situated along the Southwestern Border of the United States. They are rural residential areas, generally unincorporated, many without paved roads. They are small in size—in New Mexico, they have populations ranging from about 250 to 5,000 people. Residents are generally poor and live in substandard housing with inadequate plumbing and drinking water. Housing lots are extremely small in size and packed together, frequently creating a high density of cesspools and inadequate septic tanks. And the population is growing in size daily, compounding existing problems.

If by chance you happen to visit these colonias, you can only be struck by the primitive conditions in which the residents live. You can only walk away in disbelief that over 350,000 American citizens and legal permanent residents are subject to what most of us would call third world living conditions.

These conditions create health and environmental problems. Many colonias are situated in areas with a very shallow water table resulting in sewage trickling through the ground and contaminating the groundwater. Since many families rely on wells on their property for their drinking water—wells fed by groundwater, it's not surprising that incidences of infectious diseases in the colonias are higher than the national average. It's also not surprising that the groundwater is contaminating our rivers. The National Environmental Group American Rivers recently identified the Rio Grande as 1993's most endangered river, citing inadequate treatment of sewage waste as one of the prime causes of pollution in the border area.

The needs of the colonias have not gone unnoticed. Last year, Congress appropriated through EPA 60 million dollars to help these communities. These funds were used for grants to build needed wastewater treatment facilities. This year, the administration requested funds or EPA to continue helping the colonias construct wastewater treatment facilities. However, when EPA's budget came up for discus-

sion on the house floor, funds were stricken due to a parliamentary debate as to whether sufficient legal authority existed for EPA to make these grants.

The debate today in congress is not if we should help these colonias, just whether we have the legal authority to do so.

I want to end this debate over legal questions, and place attention on where it rightly belongs—how we can help the colonias and their residents. I have therefore introduced an amendment to the Clean Water Act authorizing EPA to make grants for wastewater treatment in the colonias.

The special needs of these communities must be met.

I also want to bring to your attention today the wastewater treatment needs of other small disadvantaged communities which I believe should be addressed by the Clean Water Act. These are small unincorporated communities with inadequate wastewater systems. These communities are too large to qualify for rural water grants, but are too small to shoulder the high per household hook-up fees or monthly water and sewer service fees that would be necessary if they were to finance wastewater treatment construction through revenue bonds or other financing mechanisms.

The South Valley in New Mexico, a small unincorporated community alongside the Rio Grande, is one such community. Most of its 12,000 residents rely on septic tanks. Their drinking water comes from wells on their property. Heavily concentrated septic tanks, a shallow water table, and tight soils resulting in poorly drained septic tanks are contaminating the ground water. state and local governments have already contributed significant funds to address the problem, but additional funding is needed. If this funding were to come through revenue bonds, residents in the area would have to pay 4 to 6 times as much as other new Mexico residents for monthly water and sewer service.

These citizens cannot afford such rates. The Clean Water Act should be amended to include a special grant program for unincorporated communities such as this.

I think that this nation can be proud of what it has accomplished through the Clean Water Act in protecting and restoring the well-being of our waters. To continue this progress, Mr. Chairman, support amendments to address wastewater needs of colonias and unincorporated communities. Thank you Mr. Chairman for your time.

STATEMENT OF HON. EDWARD KENNEDY, U.S. SENATOR FROM THE COMMONWEALTH OF MASSACHUSETTS

Thank you, Mr. Chairman, for giving me the opportunity to discuss an issue of great importance to Massachusetts and communities across the country struggling to meet the requirements of the Clean Water Act.

The federally-mandated clean-up of Boston Harbor is imposing an extraordinary burden on 2.5 million people in 61 communities in Massachusetts—nearly half the state's population. The issue touches every family and every business in the Greater Boston area.

The overall cost of the clean-up and related construction is \$5.7 billion through the year 1999—one of the largest public works efforts ever undertaken. The national average for water and sewer bills is about \$350 a year. In the Boston area, the average household will pay \$572 for water and sewer bills this year—a 300% increase since 1985. Many households above the average already pay far more. Rates are expected to escalate to over \$1000 for the average household by 1999.

The current burden and these estimated increases are major obstacles to economic recovery. They make it harder for existing businesses to survive, and they discourage new firms from locating in the state. Protests have grown into an organized movement. Residents are burning their water and sewer bills or throwing them into the Harbor in a symbolic recreation of the Boston Tea Party. Towns have voted to withhold their payments to the agency that is overseeing the clean-up. The entire project is threatened if we cannot ease the burden.

To date, federal assistance for this project has been less than 10%, compared to the 55% to 75% in federal aid that many communities received for wastewater treatment construction before the 1987 amendments to the Clean Water Act were enacted.

It is time for the federal government to do more. The reauthorization of the Clean Water Act presents the opportunity to address these urgent needs. It is vital that the Committee bill provide significantly increased federal aid for Boston Harbor, to keep pace with the escalating burden facing households and businesses. In a state where economic troubles are far from over, where even many middle-class families

are on the edge each month, struggling to pay their bills, the escalating cost of the Boston Harbor clean-up should not be forcing them to choose between paying their water and sewer bills and meeting other basic needs for their families.

We are continuing to reassess the scope of the project to make sure that each aspect of it is cost-effective. Legitimate questions have been raised about certain expensive parts of the clean-up that are difficult to justify in terms of their environmental benefit. The Committee has an important role to play in this effort, by not precluding sound adjustments to the project's design, and by not imposing new requirements that cause undue hardship in the future.

The Appropriations Committee has signaled its intent to make funding for Fiscal Year 1994 contingent on specific authorization of the project by March 31, 1994. As you know, the authorization contained in the 1987 amendments has technically expired. Consequently, I urge your help in securing short-term authorization for the ongoing clean-up, to ensure continuity until the full-scale Clean Water Act reauthorization can be enacted. Federal aid in the coming year should not be lost for lack of adequate authority.

I also urge the Committee to renew the federal government's commitment to helping the large numbers of communities across the country that are facing very expensive, court-ordered construction projects under the Clean Water Act and Safe Drinking Water Act. The circumstances for Boston Harbor are especially compelling, but this problem is definitely national in scope. In Massachusetts, many towns and cities outside the Boston Harbor area, such as New Bedford, Fall River and the communities in the South Essex Sewerage District, are struggling to comply with federal mandates. Five billion dollars annually for the State Revolving Fund in the Clean Water Act can be readily used and will ease the burden nationwide. The new revolving loan fund proposed by the President to meet the requirements of the Safe Drinking Water Act will also provide much-needed relief.

Finally, I urge the Committee to resolve a problem in the National Estuary Program that threatens to undermine its success. Section 320 of the Clean Water Act should be amended to make clear that the EPA should remain involved in the National Estuary Program process after communities develop their Comprehensive Conservation and Management Plans.

In Massachusetts, the communities surrounding Buzzards Bay have done an outstanding job in working together to develop a plan for the protection of this sensitive habitat. They have reached agreement on the plan and are ready to begin implementing it. But they are being told that the EPA must drop out of the process altogether, leaving them without the agency's valuable guidance and support to ensure successful implementation of their plan.

This problem has arisen in other states as well and it could seriously impair the benefits of the National Estuary Program. I urge the Committee to clarify the law on this issue, so that the EPA can continue to work closely with these communities.

Once again, Mr. Chairman, I commend you for holding these hearings, and I look forward to working with the Committee to achieve these important environmental goals.

STATEMENT OF HON. JOHN KERRY, U.S. SENATOR FROM THE STATE OF NEBRASKA

Mr. Chairman, thank you for holding this hearing today on the Regional Water Issues pertaining to the Clean Water Act Reauthorization. I appreciate this opportunity to join with Senator Kennedy to briefly address our dire situation in Eastern Massachusetts and to introduce our two Massachusetts witnesses, Lt. Gov. Paul Cellucci and Mr. Douglas B. MacDonald, Executive Director of the Massachusetts Water Resources Authority.

First let me acknowledge the enormous task you and your committee have before you in reauthorizing this important environmental statute. While we are here to relay our concerns about our extremely serious situation with the Boston Harbor project, I want to say up front that I know how important this reauthorization is to hundreds of communities that face similar situations around Massachusetts and across the country and I hope we can work with your committee in the coming weeks to make sure that provisions in your legislation also address concerns of smaller urban and rural communities that need assistance to comply with federal mandates.

But we are here now to talk about our specific emergency in the MWRA Water District. I believe it is in the national interest for the federal government to provide direct assistance for the MWRA. As you know, the project is a massive undertaking

which will provide water and sewer services to 2.5 million people in 81 communities with a total cost, including the combined sewer overflow and capital costs improvements, of over \$5 billion.

At the inception of the Clean Water Act, congress acknowledged the important federal role by providing federal support of between 50% to 90% of the funding for systems on the scale of the Boston Harbor project. However, the Federal Assistance for the MWRA project to date has only been about 8% of the total estimated costs.

Let me finally say that this is not a partisan issue but a bipartisan issue. The Clinton Administration this year, as did the Bush Administration in prior year budgets, included \$100 million to assist in curbing the massive rate increases that those in Eastern Massachusetts have been facing in the past few years. While Senator Kennedy and I would like to see this amount doubled—we introduced legislation this year which would authorize \$1 billion over 5 years—we continue to work with the administration to encourage the congress to include the Clinton Administration's 1994 budget request of \$100 million in the 1994 appropriations bill.

We ask you, Mr. Chairman and members of the committee, to help us secure an authorization for that funding as requested in the President's Budget in order to release to the Boston Harbor Project the funding contained in the House's EPA Appropriations Bill, prior to March 31, 1994, when it will expire.

Thank you for taking time to hear Senator Kennedy and me and for allowing Lt. Gov. Cellucci and Mr. MacDonald an opportunity to address your committee.

TESTIMONY BY AREGO PAUL CELLUCCI, LIEUTENANT GOVERNOR,
COMMONWEALTH OF MASSACHUSETTS

Thank you for the opportunity to testify before you on *Senate 1114, The Water Pollution Prevention and Control Act of 1993*. On behalf of Governor William Weld and the Commonwealth of Massachusetts, I am here today in strong support of this legislation to reauthorize the Federal Clean Water Act (CWA). My comments on the bill will address the critical issue of funding for wastewater treatment projects, and will also highlight some of the innovative and progressive provisions related to pollution prevention and watershed protection.

TITLE I. The price of clean water across the nation is rising dramatically. Massachusetts, with its dense population, is burdened with particularly high costs for water pollution abatement projects. Local communities face costly upgrades of existing water and wastewater facilities or the need for entirely new facilities to serve growing populations. Massachusetts' immediate unmet capital needs for wastewater treatment projects is \$6.6 billion. This includes construction of municipal wastewater treatment plants, major interceptor sewers, wastewater pumping stations, correction of combined sewer overflows, collection sewer systems, and removal of infiltration/inflow from existing sewer systems. More projects and additional needs in these categories are expected in the near future as final planning is completed on ongoing municipal wastewater projects.

Financing wastewater projects in Massachusetts and other states will require both federal and state support. To reverse the unfortunate decline in coastal and inland water quality, and to cushion the impact on ratepayers, federal and state dollars are needed to help fund planning, design and construction/upgrades of treatment plants and pump stations, construction of sewer systems, infiltration/inflow removal, and combined sewer overflow projects.

But Massachusetts is not asking the federal government to solve our water quality problems without a commensurate effort on the state's part. We have optimized the expenditure of all federal assistance received from past CWA authorizations. Just last month we successfully financed 37 environmental abatement projects in 20 communities for \$91.1 million. To support future wastewater infrastructure needs, the Weld Administration's strategy is to support an annual General Fund appropriation of state monies for wastewater treatment projects (\$30 million was appropriated for FY '94); amend the State Revolving Fund (SRF) to include more funds for wastewater projects; and establish an innovative Technologies Program to facilitate permitting/implementation of innovative wastewater treatment technologies to better attain clean water objectives at reduced cost to ratepayers. Specific to the Boston Harbor Project, Governor Weld has convened a rigorous audit of the project, to identify possible cost savings related to project financing, management, administration, scheduling and technology. Governor Weld will press for appropriate cost-saving modifications in the Boston Harbor project where consistent with Clean Water Act requirements.

In order for Massachusetts and other states to meet their obligations in funding wastewater treatment, there is an urgent need for renewed and expanded federal participation in funding these projects. As you know, the federal authorization for new SRF monies has expired and is precipitating a major financial headache for state and local governments.

We support the SRF authorizations in Senate 1114, AS A MINIMUM, and urge you to increase this amount to the highest level possible. Under this bill, SRF capitalization grant funding would be reauthorized at \$2.5 billion annually through Fiscal Year 2000 (total of \$15 billion). Additional amounts each fiscal year, rising to \$2.5 billion in Fiscal Year 2000 (total of \$7.5 billion), would be authorized pending Congress meeting its annual deficit reduction goals. Under the existing federal allocation formula, the SRF capitalization grant of \$2.5 billion would provide Massachusetts with \$79 million per year. When the federal monies are combined with a 20% state match (\$16 million), the resultant capitalization funds of \$95 million would be placed into a reserve which would secure \$190 million in revenue bonds. Using this approach, the original \$79 million in federal grants will generate \$190 million in the construction of critical municipal pollution abatement projects each year. If the \$7.5 billion in funds tied to the deficit reduction goals are funded, additional construction could be funded from 1994 through 2000. This increment will still leave Massachusetts far short of its need.

Title I of Senate 1114 provides for the development by the EPA of a new SRF allocation formula, based on need for all eligible categories and the need for projects covered by a watershed management plan. We strongly support an allocation formula predicated upon actual documented needs. At present, Massachusetts has the third highest total needs (\$7 billion) in the nation and the highest *per capita* needs of all of the industrialized states. Yet, the current funding allocation formula ignores this all-important fact. The new allocation formula should be implemented as swiftly as possible. We underscore our support of provisions in the bill to finance and utilize comprehensive watershed management plans, to better target states' efforts in making effective water pollution control decisions.

On the issue of project eligibility under SRFs, we favor an expansion of the currently limited eligibilities, to include combined sewer overflow and stormwater control programs, implementation of watershed plans, implementation of clean lakes protection projects, and technical and financial management assistance for subsurface disposal systems. There are a multitude of "non-traditional" wastewater projects currently ineligible for CWA funding, primarily in the urban northeast and in small rural areas across the country. For example, Massachusetts, in particular, is faced with tremendous combined sewer overflow problems in its older cities. Stormwater pollution is the number one nonpoint source of water quality degradation in Massachusetts' coastal and inland waters. Massachusetts applauds Senate 1114's expanded eligibility criteria under the CWA for funding these kinds of projects.

Under the current CWA, limitations with regard to eligibility for federal funding are also felt by wastewater treatment projects with enormous capital costs, such as Massachusetts' Boston Harbor project. New Bedford, MA is another example of a community with wastewater treatment project costs that exceed the ability of the municipality and its ratepayers, even with state assistance, to pay. We encourage the addition of provisions in Senate 1114 which recognize the particular difficulties of funding large wastewater treatment projects.

I wish to emphasize our grave concern with regard to securing the \$100 million appropriated in the FY '94 Budget for the Boston Harbor project. This amount was appropriated *pending authorizing language in the CWA reauthorization by March 1, 1994*. As CWA reauthorization may not occur by this deadline, we urge that Congress take the necessary action to ensure this \$100 million is not lost to the Boston Harbor project.

TITLE II. Senate 1114 provides for the development and strengthening of guidelines and effluent criteria for toxic pollutant discharges. Massachusetts strongly endorses the provision for new EPA authority to issue *guidelines* for source reduction practices, including elimination of discharges whenever feasible and prohibiting or limiting the release of pollutants to other environmental media. There should be as much emphasis as possible in the bill to support waste minimization and recycle/reuse initiatives.

We do not see in Senate 1114 a reasonable process or mechanism which would allow states to modify technical criteria, policies, and permit limits according to local and regional water quality conditions. Such an allowance would be particularly important for heavy metals where there is no evidence of in-stream toxicity. Unreasonable and unfair limits defeat the general purposes of the CWA.

We strongly support the bill's requirement to develop sediment criteria, to strengthen antidegradation provisions for sediment quality, and to develop a national policy on mixing zones.

Section 205 of Senate 1114 establishes a pollution prevention planning process for industrial dischargers. Dischargers of pollutants which, if reduced, would benefit human health or the environment, are to develop pollution prevention plans for these pollutants and other toxics as part of their permit applications. We strongly support this planning requirement, as it could result in meaningful pollution reduction over the life of the permit and would complement Massachusetts' innovative Toxics Use Reduction Program. Our toxics reduction program aims to cut toxic waste generation by 50% by 1997. With cumulative degradation occurring in our waterways from multiple sources of pollution, it is no longer sufficient to simply meet water quality standards where additional reductions are possible and economically achievable.

TITLE III. The Commonwealth strongly supports the expansion of authority for watershed based implementation of CWA goals. Providing states flexibility to develop watershed based approaches to water pollution control is excellent, and sorely needed. It makes both economic and environmental sense to do a whole watershed assessment to determine how to best target pollution control measures for the most effective expenditure of both regulatory and infrastructure capital. States can get more environmental quality for fewer dollars if they are allowed to use a combination of controls, including pollution prevention and nonpoint source management as well as the traditional end-of-the-pipe point source controls to attain fishable/swimmable waters. States also need the flexibility to take into account groundwater contribution to surface water quality degradation in determining where to direct pollution control measures.

As I noted previously in this testimony, in Massachusetts—as in most of the rest of the country—nonpoint source pollution is the main water pollution culprit, yet the current CWA is focused primarily on point-source discharges. The traditional focus has meant spending millions of dollars for small increments of pollution reduction rather than spending the same or possibly less money reducing nonpoint sources and implementing point-source pollution prevention measures. The watershed approach will be a way of setting clean-up priorities based on the biggest bang for the buck in each river basin. It will also mean some relaxation of the point-source control constraints that have, in some instances, not served us in a cost-effective manner. To illustrate this point, I call your attention to two examples where a reshuffling of priorities may in fact produce greater improvements in water quality: In the metropolitan Boston area, stormwater is believed to contribute more to the failure to meet fishable/swimmable goals in Boston Harbor and its major tributaries than combined sewer overflows (CSOs), but the CWA provides no funding to states for stormwater remediation. And the federal government, in conjunction with the states, is spending millions for immediate toxicity controls at sewage treatment plants rather than targeting time and resources to reducing the pollution at the source or to identifying and controlling other, more serious sources of toxic pollution for less money. Incorporating a watershed approach in the CWA can be a "win/win" for regulators and the regulated community, and provide for more effective environmental protection.

Senate 1114 specifies that watershed plans are to characterize waters and land uses of the watershed, identify water quality problems, identify goals for watershed management, allocate needed load reductions among point and nonpoint sources, and identify needed financial resources and the institutional arrangements needed to carry out the plan. We strongly support this prescription for watershed plans, but caution that watershed based permitting must build on the knowledge, successes and failures realized since the inception of the CWA. The watershed planning established by Senate 1114 must not recreate the Section 208 master planning work accomplished in the 1970's; rather, it must expand and integrate real implementation goals into a results oriented watershed planning and permitting program. Emphasis must be placed on the allocation of needed load reductions within watersheds and the identification of financial and institutional resources needed to implement watershed plans. Implementation is key.

Massachusetts strongly encourages the regulatory development of a watershed-based effluent reduction trading program that could significantly reduce the cost of meeting water quality standards. Similar market-based incentives have worked effectively in controlling air pollution and should now be applied to other media, such as water. An effluent trading program could ensure the overall quality of the water resource by determining the total amount of pollutants that can be released without compromising water quality standards. A successful effluent reduction trading pro-

gram could potentially include both point and nonpoint sources and provide significantly greater cost-effectiveness than traditional command and control approaches. Massachusetts suggests that the CWA be amended to specifically sanction (or even promote) effluent reduction trading.

Another important addition to Senate 1114 which would greatly assist in the implementation of a watershed approach under the CWA would be provisions to fund the development and use of regulatory and management tools, such as Geographic Information System (GIS). GIS, a complex system of resource mapping in the early stages of development in Massachusetts, would assist regulators and managers in applying water quality standards and pollution requirements in the most sensitive or degraded areas.

Senate 1114's proposed standardization of monitoring and reporting timelines to five years instead of two years would greatly improve the ability of states to manage limited resources for these purposes. Massachusetts strongly supports this provision, as well as the provision establishing new authority for the EPA or states to require dischargers to monitor receiving waters (in addition to their effluents). States are hard pressed from a resource standpoint to accomplish this monitoring on their own. Ambient water quality monitoring is critical to understanding the interplay of individual discharges with each other and the cumulative impacts of multiple discharges on background water quality. With receiving water quality information, regulators can better target controls to the significant sources of water quality degradation.

Massachusetts supports the inclusion of stronger enforcement guidelines for nonpoint source controls. Improved enforcement of nonpoint source control measures will safeguard the initial water quality successes of point-source pollution controls.

We would like to see stronger links made between the EPA's administration of the Section 319 nonpoint program and the administration of other federal programs, as has been attempted with federal transportation legislation—to include agriculture, forestry, and public works projects, for example. We support provisions of Senate 1114 which provide for the coordination of various federal agencies in water quality improvement.

We applaud Senate 1114 for linking two important policies of the Weld-Cellucci Administration: watershed management and privatization. Senate 1114 allows for nonprofit private organizations to assume the role as stewards for a state designated watershed management area. This provision recognizes the significant interest and expertise of many nonprofit environmental organizations in protecting our water resources, and the many benefits of public-private partnerships.

TITLE IV. Massachusetts supports provisions of Senate 1114 which extend the time periods required to eliminate, in a reasonable way, discharges from CSOs and urban stormwater. We stress, however, that these modifications should be carefully integrated with other policy and funding provisions so as to maximize resolution of these serious water quality problems. New stormwater discharges should be required to implement Best Available Technologies (BAT). For existing discharges, an aggressive interim schedule requiring regular improvements should be developed. This schedule, based on a municipal/state priority plan, (i.e. part of a watershed plan), could be incorporated into permits, consent orders or both.

Massachusetts supports language under Title IV which targets assessment of the principal sources of pollutants in stormwater. Again, these data must be integrated into watershed plans, so that informed decisions on where to focus limited resources for water pollution control can be made.

Massachusetts is making considerable progress in water conservation, but a great deal more can and must be done. Conservation efforts are central to protecting public water supplies and water resources dependent on maintenance of groundwater levels and instream flows, and to reducing the cost and maximizing the efficiency of wastewater treatment. Accordingly, we support Section 403 of Title IV, which would authorize the Army Corps of Engineers to assist states in water conservation and the EPA to coordinate federal policies on municipal, industrial, commercial, and residential water conservation. The proposed national clearinghouse on water conservation would benefit government, industry and residential users alike and should be adopted.

TITLE V. We support the provision under this title which calls upon the EPA to work with federal and state agencies to identify sensitive aquatic systems that support valuable biological resources. Also of importance is the provision directing EPA to issue biological monitoring methods for establishing the biological condition of waterbodies. Massachusetts is evaluating the establishment of biological criteria for wetlands whose water quality can't be measured by levels of conventional pollutants (for example, Biochemical Oxygen Demand and Total Suspended Solids) which vary

seasonally. We would find guidance from the EPA regarding biological monitoring methods helpful.

Also under this Title, we support the authorization of EPA to issue special experimental permits for facilities proposing to test innovative or alternative technologies, as long as water quality standards are required to be met.

TITLE VI. Massachusetts is currently establishing an innovative and Alternative Wastewater Treatment Technologies program which would benefit greatly from provisions of Senate 1114 authorizing funding and programs to demonstrate new or significantly improved water pollution control practices, methods, technologies, or processes. Especially noteworthy is Senate 1114's recognition of the need to promote technologies which have the potential to control pollutants that present risks to human health, to advance pollution control of regulated industries, to foster pollution prevention, or to advance the control of point and nonpoint sources of water pollution.

Massachusetts strongly supports the provision providing for National Estuary Program funding, specifically funds for implementation of Comprehensive Conservation and Management Plans beyond the initial five year planning phase of these programs.

CONCLUSION

I again thank you for the opportunity to appear before you today to testify on this landmark piece of water quality legislation. Please register Massachusetts' vigorous support of Senate 1114 and consider the important amendments we have offered today. We thank you, Chairman Graham, for your leadership in reauthorization of the CWA.

Special thanks to Senator Baucus and Senator Chafee, for your recognition of the new directions the CWA must take to accomplish real improvement in the quality of the nation's waters. Thanks also to the distinguished members of the Committee, for their aggressive support of Senate 1114.

TESTIMONY OF DOUG MACDONALD, EXECUTIVE DIRECTOR, MASSACHUSETTS WATER RESOURCES AUTHORITY

Mr. Chairman, thank you for the opportunity to present this testimony during your hearings on the reauthorization of the Clean Water Act. I also want to thank Senators Kennedy and Kerry for their statements in support of the Authority's need for special funding.

The Massachusetts Water Resources Authority is a wholesaler of wastewater treatment services and water supply to over 2.5 million people in eastern Massachusetts. The Boston Harbor Project, which will provide secondary treatment for the wastewater generated in the district, allowing compliance with the Clean Water Act, is the largest sewage treatment facility under construction in the United States. We are building it under a Federal court ordered schedule that requires completion by 1999. Even though the milestones in the court order are demanding, we may be able to complete some elements of the project even earlier than scheduled. Already, we are seeing environmental benefits in the Harbor from some of the improvements we have made, such as the sludge processing plant that now keeps sludge out of the Harbor.

The Boston Harbor Project is a massive undertaking, bringing our sewage treatment system from its seriously deteriorated and inadequate condition in the early '80s to a state-of-the-art facility serving the entire metropolitan area by the end of this decade. It is extraordinarily expensive, however. The Boston Harbor Project itself will cost an estimated \$3.8 billion. The costs of CSO improvements and other related projects will bring the total for wastewater through FY 1999 to over \$4.3 billion. The Authority is also facing nearly \$800 million in water supply system costs over that same period.

We are doing what we can to reduce these costs. We are exploring with the court the downsizing of the secondary treatment plant, to treat the smaller flow our more refined estimates and metering now show we can expect. And the EPA CSO control policy endorsed by S. 1114 may allow to reduce our costs for CSO compliance, particularly in the period after FY 1999. We are also hopeful that other provisions of this year's Clean Water Act Reauthorization, such as the watershed planning provisions, will allow us to find other ways of reducing the wet weather flow of pollutants to Boston Harbor and other receiving waters, and reduce our need to control CSOs so stringently. The project will still be very costly even with these reductions.

We know it is difficult, in these days of tight budgets and many competing demands, to talk of special funding for a single major project. Let me try to tell you why the Boston Harbor Project is special, and why we need these funds so desperately. Mr. Chairman, this project is like the big city sewage treatment plants built in the '70s and early '80s with Federal grant assistance, but it differs in important ways. First, we did not have an adequate primary treatment plant and collection infrastructure onto which we could add the required secondary treatment plant. We literally started from scratch. Second, this project is late, because of the extended dispute between Boston and EPA and other local interests over the possibility of a waiver of the secondary treatment requirement under section 301(h). That dispute is resolved, and court has ordered compliance by 1999. The Authority is committed to full compliance with the mandates of the Clean Water Act and the retirements of the decree under which we operate.

The result of our compliance with the federal law has been massive rate increases. Water and sewer charges in Boston are now the first in the nation. As a result, wholesale rates have increased 600% since 1985. These rates now average over \$570 a year for every household in our service area. Without major relief on our capital investment or debt service, we expect those rates to at least nearly double again, to \$1,000 per household by 1999. We need help—the land of grant assistance our sister cities received for their wastewater treatment systems. To date, this project has only received about 8% of our total capital costs in Federal assistance, even with the special appropriations of the past few years. It is the debt service costs we face, having to fund this project virtually alone, that make our rates rise so dramatically. Debt service on our current capital investment approaches \$200 million a year. As we have to borrow more to complete the project, annual debt service may exceed \$360 million by FY 1999.

We are facing a citizen revolt with our ratepayers. They have thrown their sewer bills into the Harbor in protest, in a later-day "Boston Tea Party". The rate rebellion is the hottest political news in Boston, constantly discussed in all the media. The political consensus for completing the project is threatened, and it may be difficult to maintain the support for the project that is needed to continue to make progress, without evidence that the Federal Government is willing to commit funds to help meet the mandates of the Clean Water Act and the Federal court. We are spending a lot of our own money on this project, borrowing extensively and carrying high level of debt service. We are doing what we can to reduce costs, carefully managing our spending. We are also receiving some assistance from the State, particularly on short term rate relief. But the ratepayers are still bearing 90% of the costs of this project. They will not be able to carry that load as it gets heavier and heavier. If we want a clean Boston Harbor, we need a larger Federal contribution toward that goal.

So we are asking the Committee for several things. First, we ask that you act on authorizing legislation so that the money for the Boston Harbor Project contained in the FY 1994 EPA appropriations bill can be released. The Administration requested \$100 million for the Boston Harbor Project in its FY 94 Budget. The House-passed appropriations bill contains an appropriation for grants for Boston and other projects, but the bill requires that the use of such funds be authorized prior to March 31, 1994, or these funds may be lost. We ask that you provide the authorization for such a grant to MWRA, in a timely manner. The earlier we receive the money during in FY 94, the more we can avoid borrowing that will otherwise be necessary, reducing debt service and rate increases over the whole life of the project. The Committee may provide this as a separate short-term authorization, or as part of the larger long-term reauthorization of the Clean Water Act.

MWRA needs a long-term commitment of Federal funding, as part of the programs of the Clean Water Act. It is not essential that such programs single out Boston. A well-designed program that meets Boston's needs may also benefit other communities. S. 1114 contains a broad-based program accepting the principle of grant assistance or loan forgiveness to provide rate relief, the so-called "Disadvantaged Communities" provisions, and we applaud you for including this concept in the bill. There are several features of the legislation, however, that make this program insufficient to help Boston, such as the limitation to 20% of a State's annual SRF allocation, the limitation to \$20 million overall in loan forgiveness, and the way the threshold qualifications for excessive sewer rates are stated. The Authority would be happy to work with the Committee on redrafting the qualifications to assure that communities like the MWRA service area, with massive rate increases, actually do qualify for special assistance. I suspect, however, that capital assistance of the magnitude required by the Boston Harbor Project may be harder to accommodate within the Disadvantaged Communities program without significant redesign.

This program does contain the germ of what we are requesting, though, and we would be pleased to work with the Committee to expand it in a way that will offer meaningful assistance to the Boston Harbor Project.

To keep the Boston Harbor Project viable, MWRA suggests these provisions for the long-term reauthorization of the Clean Water Act:

- We strongly urge a special program of grant assistance for communities with high capital costs for secondary treatment needed for compliance with the Clean Water Act, and unacceptably high sewer service rates as a result. It is critical that this assistance be provided as grants, because only this type of subsidy of capital costs will reduce debt service, and therefore rates to users, over the life of the project
- The Authority is very grateful for the level of funding requested by the Administration in the FY 94 Budget. A higher level of capital assistance, however, sustained for the full authorization period of the Clean Water Act, is actually needed to produce the kind of rate relief and equity we are requesting. We suggest the Committee consider the level of authorization provided by S. 350, introduced by Senators Kerry and Kennedy, of \$200 million per year over five years. This could be provided in a single authorization, or could be the aggregation of grants available under several programs for which the Authority might qualify.
- Funds for municipal wastewater treatment plant construction should be allocated on the basis of a needs survey reflecting the costs of remaining eligible projects necessary to meet the requirements of the Clean Water Act. The funds authorized by this legislation should no longer be allocated under the old allotment formula, using old population figures and out-dated estimates of needs.
- We hope there will be adequate flexibility provided in any grant program for which MWRA qualifies so that some portion of the money may be used to reduce debt service in addition to the major purpose of capital assistance.

There is much in S. 1114 that appreciates and supports, and we look forward to working with the Committee to refine this legislation. For this bill to make a lasting contribution to clean water in Massachusetts, however, it must contain a significant level of grant assistance for the Boston Harbor Project. I have outlined several areas where I believe the bill could be strengthened.

Thanks again for the opportunity to testify on the needs of MWRA in this year's reauthorization of the Clean Water Act.

STATEMENT OF TOM BEHR, DEPUTY MAYOR, CITY OF SAN DIEGO

Mr. Chairman, I am Tom Behr, Deputy Mayor of San Diego. Thank you for inviting me to testify before your Committee today.

There are two primary requests that I am making to you and the Committee. The first is that the Clean Water bill be written in a manner that allows a city such as San Diego to continue to use advanced primary treatment where there is a deep ocean outfall which provides the equivalent environmental protection of secondary treatment. The second is that wastewater reclamation be eligible for funding under Title V of the Act.

Both of these requests fit into our priority considerations for continuing to protect both San Diego's and our nation's waters. These requests result from decades of experience in San Diego in working on Clean Water issues. In addition, my comments reflect the conclusions reached in the National Academy of Science report which recommends changes for coastal protection that should be considered in a new Clean Water Act.

Our two requests for changes in the law are dictated by the needs of California in reducing pollution, improving our overall water quality and protecting our coastal waters. We are looking at the San Diego region as a broader ecosystem where we face a variety of water quality threats from non-point source runoff, from Mexican sewage flowing across our border and from a need to enhance our long range drinking water supply. To protect our greater geographic area we believe that it will take local initiative and additional funding. This is the reason that it is very important to the residents of San Diego that the requirements for Clean Water Act compliance allow the City to utilize its scarce funding to provide the greatest possible protection to the environment. This can best occur by continuing the use of the Point Loma Advanced Primary Treatment Plant in conjunction with its Deep Ocean Outfall and its ambitious wastewater reclamation program.

Point Loma Outfall

The existing Clean Water Act does not allow for the City and the Federal District Court to take the steps necessary to fully protect our ocean with a program that makes the best use of resources. Existing Clean Water requirements for the San Diego Ocean Outfall ignore sound science, ignore regional differences and ignore new and improved technology for treating sewage.

The existing law requires the construction of a wastewater treatment program that will cost San Diego ratepayers billions of dollars. San Diego seeks the option to develop a wastewater treatment program that has the same environmental protection, but at a cost of \$1.3 billion. The reason for this cost difference is the Clean Water Act requirement that the City must reach a secondary treatment standard.

However, with a deep ocean outfall, there is no demonstrable difference in environmental impact between secondary treatment effluent and San Diego's present advanced primary treatment effluent. To allow San Diego ratepayers to save one billion dollars with no reduction in the protection to the environment, we are asking that the reauthorized law be written to allow for this special circumstance.

In San Diego we have an ocean floor that slopes steeply away from the shoreline, accessing deep marine waters within a few miles offshore. We have an open coast that is a part of the vast expanse of the Pacific Ocean. We have swift currents and dynamic mixing in the waters off Point Loma.

We also have in place the technology that we need to ensure environmental protection. San Diego currently operates a state-of-the-art advanced primary treatment plant that discharges treated wastewater to the Pacific Ocean through a deep ocean outfall. This outfall currently discharges in 220 feet of water over two miles offshore.

The Point Loma Outfall was designed to protect bathing beaches from contamination. It has done so without exception over the past thirty years. When California's State Ocean Plan was amended to protect not only swimmers at bathing beaches but also divers in the offshore kelp beds, San Diego planned the extension of its outfall even farther offshore—4.5 miles—and into deeper waters—320 feet below the surface.

This extension, which is currently under construction, will make San Diego's outfall the longest and deepest reinforced concrete structure in the world.

San Diego has monitored the effects of the existing discharge on the marine environment for thirty years and has found that *there is no significant impact*.

In the EPA's federal court lawsuit against the City in 1991, Federal Judge Rudi Brewster considered a significant amount of evidence presented by a cross-section of the best scientists in the country—ours and yours—and found that *there is no adverse impact*. Please understand that the City's position of no adverse environmental impact is not mere opinion or posturing. Rather, it is a validated judicial finding.

Regional Environmental Protection

The National Academy of Science report, published in April, clearly shows that we can balance protecting our precious ocean environment with the needs of San Diego's sewage system by setting water and sediment criteria and standards.

Most importantly, it confirms what San Diego has been saying for years: advanced primary treatment is appropriate for San Diego's deep ocean environment at the Point Loma Outfall.

The National Academy's report provides a scientific foundation for Congress to protect the coastal marine environment by amending the Clean Water Act to reflect regional science and geography.

Water Reclamation

San Diego has a long-term strategy for wastewater treatment, and environmental protection—it is called the Consumers' Alternative. A major element in the program is the construction of a 30 (expandable to 55) million gallons per day (mgd) wastewater reclamation plant, which will cost \$166 million. It is an ambitious initiative that will allow the City to initially reclaim 30 mgd of wastewater and utilize it for a number of purposes for which limited and expensive potable water is used today. That construction is underway as I speak today.

A major thrust in S. 1114 is the protection of our waterways from toxic pollution and non-point source pollution. While those objectives are also an integral part of the Consumers' Alternative, we urge you to consider an additional and unique program faced by California cities in their water programs. If too much water is used by agriculture and cities, the natural ecology of our streams, rivers and lakes is threatened. San Diego has taken steps to cut its water demand through an extensive

volunteer conservation program. A 20% reduction in average water use has been achieved over the past three years.

It seems that the region has achieved almost the maximum amount of water savings through our home and business water conservation program. Now we are looking to water reclamation as the next major step in the program. I think that water reclamation should be considered in the amended Clean Water Act. Reclamation is a tool for wastewater management. In San Diego, by replacing the 30 mgd in peak demand and a lesser amount year round, we greatly relieve the pressure and demand for greater water supply from the Colorado River and the lakes and rivers in our state. It is folly to pump the effluent into the Pacific Ocean when it can meet some additional demand through a water reuse program.

Costs

I mentioned earlier my concern over the cost faced by the City if amending the Clean Water Act does not include consideration of the unique circumstances in San Diego. While the cost is significant, it is even more of a burden when we realize that San Diego has had a low priority for EPA grants and for State Revolving Fund (SRF) loans.

From 1972 to 1987, the Clean Water Act provided funding for no more than 75% of the cost of secondary treatment improvements. The State of California provided a matching amount of 12.5%. The remainder was eligible for state loans. The administration of Clean Water grants was left to the states, and the California Regional Water Quality Control Board established a priority list of projects to receive funding.

From 1970 to 1986, the City of San Diego received just \$95 per capita in grant funding under the Clean Water Grants program, just 25% of the statewide average of \$383 per capita. San Francisco received \$1696 per capita, nearly four-and-one-half times the statewide average. Sacramento received \$683 per capita, nearly double the statewide average.

From 1987 to today, the City of San Diego has received just \$30 million towards the cost of a \$2.8 billion plan for secondary treatment. Because we meet the State Ocean Plan requirements, the City is a low priority for funding under the State's Revolving Loan Program. Under the current system we estimate that 99% of the costs to upgrade our sewerage system will be paid for by local ratepayers. I don't think that's what the Congress intended when it passed the Clean Water Act in 1972.

Conclusion

San Diego has a strong wastewater management program. It includes treatment, conservation and reclamation. It is important that the Clean Water legislation this Committee writes provides San Diego the framework to continue to implement its program and enable us to continue to protect our precious coastal waters without spending one billion dollars on a treatment facility at Pt. Loma that provides no discernable additional benefit to the environment.

Thank you for the opportunity to be here today.

STATEMENT BY E. (KIKI) DE LA GARZA, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. Chairman and Members of the Subcommittee, thank you for holding this hearing on various watershed planning issues as they relate to congressional reauthorization of the Clean Water Act. I commend you Mr. Chairman for including both the special problems associated with the Gulf of Mexico coastal areas as well as the water service problems faced in colonias along the U.S.-Mexico border.

The Gulf of Mexico is a vital economic resource for our country. The Gulf is the source of over 30 percent of the domestic fish and seafood marketed here in the United States. More than 90 percent of U.S. and Mexican oil production comes from offshore oil wells located in the Gulf. Ports along the Gulf handle 45 percent of the tonnage that passes through all U.S. ports. We have the growing resort and recreation industries along the Gulf coastline that generate approximately \$10 billion per year in revenues.

But the Gulf region is more than an economic asset, it is also an environmental asset. The Gulf and its coastal areas comprise one of North America's most important and fragile ecosystems. Three-fourths of the North American landmass drains into the Gulf. The wetlands in the Gulf region provide habitat for more than 75 per-

cent of the migratory waterfowl of North America. The region is a breeding ground for a astounding variety of sport and commercial fish and shellfish species.

It's the health and future of this ecosystem that brings us here today. The simple fact is the Gulf's fragile ecosystem is threatened on several fronts by man's activities.

For too long we have been of the mindset that economic development and environmental protection are mutually exclusive and diametrically opposite objectives. It is time to break out of that way of thinking.

If the Gulf of Mexico is to continue to be a productive economic resource, we must do a better job of managing—and yes, in some cases, protecting—its waters, its coastal wetlands and its beaches.

That is why I have introduced H.R. 1566 on the House side. It's Senate counterpart is S. 686 which is cosponsored by Senator Graham of Florida and Senators Breaux and Johnston of Louisiana.

Basically, this legislation has three principal components. First, it would require the Department of Agriculture to conduct a complete inventory of laws and regulations affecting agricultural wetlands. Second, it would establish a Federal-state coordinating body, a partnership, if you will, in the form of a Gulf of Mexico Commission. Third, it would formally establish the Gulf of Mexico Program within the U.S. Environmental Protection Agency.

My objective is to promote sensible and sustainable economic development of the natural resources of the Gulf of Mexico and the surrounding coastal areas. Let me briefly explain these three major components.

Inventory of agricultural wetlands and regulations: Probably no area of environmental policy has been a source of greater controversy and confusion for farmers than the regulation of wetlands.

We have four Federal agencies—the EPA, the Army Corps of Engineers, the interior Department's Fish and Wildlife Service and USDA's Soil Conservation Service—regulating wetlands or various aspects of wetlands issues. There are also State laws and regulations affecting wetlands.

My bill requires the Secretary of Agriculture to conduct a complete inventory of all the Federal and state laws and regulations affecting the use of wetlands for agricultural production. This information is to be used by the Secretary in developing recommendations on how to clarify, consolidate, better coordinate, harmonize and simplify the regulation of agricultural wetlands. My legislation would also require the Secretary to look specifically at these issues as they affect the Gulf region and what can be done to foster the prudent use of agricultural lands in these states.

Gulf of Mexico Commission: Today there is no coordinating, on-going public entity for the Gulf region as there is for the Great Lakes and the Chesapeake Bay.

H.R. 1566 would establish a Gulf of Mexico Commission, comprised of Federal and state officials and non-government representatives. The Gulf of Mexico Commission would be responsible for setting resource and development goals for the Gulf of Mexico region. The Commission would seek to better coordinate the various Federal, State, local and private sector activities aimed at protecting and developing the Gulf of Mexico.

EPA Gulf of Mexico Program: H.R. 1566 would also formally establish a Gulf of Mexico Program at EPA. It would require that this program be administered by an EPA office located in one of the Gulf states. H.R. 1566 would also direct EPA to work closely with the Gulf of Mexico Commission in setting environmental policy in the Gulf region.

I believe the Commission concept and the EPA Gulf of Mexico Program office are essential to fostering trust and cooperation between all levels of government, with industry, and with the concerned public.

Mr. Chairman, there is also an international aspect to the Gulf's problems and solutions. For you see, the Gulf is also our "other border" with the country of Mexico.

I believe congressional action to begin addressing the Gulf of Mexico's problems would encourage Mexico and other Caribbean countries to take similar steps. I have discussed this issue with Mexican President Salinas and his Secretary of the Environment, Luis Donaldo Colosio, and his Secretary of the Fisheries, Guillermo Jimenez Morales—and they share our interest in this area.

Mr. Chairman, I believe we can and must do a better job of balancing man's economic needs and the Gulfs environmental health. I have introduced H.R. 1566 as one set of policy options for your consideration. I look forward to working with the members of this Senate committee and with the members of the House Merchant Marine and Fisheries on this issue.

Mr. Chairman. I also want to commend this Subcommittee for focusing its attention on the water-related problems faced by the quarter of a million people who live in the impoverished American communities called colonias along our Southwestern border.

I represent one of the congressional districts that has a number of colonias. I have fought throughout my congressional career for Federal and state funding to bring basic water and sewer services to these people.

It's my understanding that the conference report for the fiscal 1994 agricultural appropriations includes \$25 million in USDA funding for colonia water projects. I worked hard for this funding on the House side and I'm pleased to hear it has been included in the bill.

While we have made considerable progress, I must admit that much, much more needs to be done.

I have been working with USDA to establish a clearinghouse network to help disseminate information to colonia residents on the various types of Federal, state and non-governmental assistance available to help them.

I might also add that last year's agricultural appropriations bill instructed USDA to provide Congress with an inventory of the Federal programs available to colonia residents; and a Federal action plan on how we can better address these issues. The inventory report is expected soon, I am told. The action plan will be submitted later this year.

Finally, Mr. Chairman, I would like to bring to your attention another piece of legislation I have introduced (H.R. 2545, the Colonia Assistance Authorization Act of 1993) that deals specifically with colonias. H.R. 2545 would formally authorize EPA to provide financial assistance for the construction of water supply systems and the installation or improvement of sewers and wastewater facilities serving colonias.

This legislation seeks to establish a remedy action taken by the House of Representatives that stripped language targeting \$50 million for colonia water projects out of the fiscal 1994 EPA appropriations bill. It is my hope that this legislation could be included in the Clean Water Act reauthorization.

Mr. Chairman, I appreciate your interest in the problems of the colonias and hope this committee would see fit to help us focus Federal resources and attention on this issue. Thank you for allowing me the opportunity to testify here today.

STATEMENT OF HON. JOHN GLENN, U.S. SENATOR FROM THE STATE OF OHIO

As Co-Chairman, along with Senator Durenberger, of the Senate Great Lakes Task Force, I would like to commend Chairman Graham and the Environment and Public Works Committee for holding one of its Clean Water Act hearings on Great Lakes and other regional programs. It is appropriate, I think, that we focus special attention on the Great Lakes in this reauthorization of the Clean Water Act, as the Great Lakes contain roughly 95% of the nation's fresh surface water, and remain the most valuable freshwater resource on our planet.

I would like to begin by expressing my strong support for S. 1183, the Great Lakes Clean Water Act Amendments of 1993, of which I am an original cosponsor, and by acknowledging the efforts of my colleague, Senator Metzenbaum, in introducing this omnibus Great Lakes bill. I am the author of certain provisions of the omnibus bill, relating to sediment reduction, pollution prevention for cities, and Great Lakes research coordination. In a moment, I will elaborate on these provisions, but I would first like to comment generally on the importance of the Great Lakes and a continued federal commitment to their protection and restoration.

The Great Lakes are a precious freshwater resource, supplying millions of Americans with a livelihood, drinking water, recreation and inspiration. They also support a fragile and unique natural ecosystem and require special care by all its users—basin residents, industry, and government, alike. We of the Great Lakes region continually strive for better environmental protection for this irreplaceable resource which we are so fortunate to have in our backyards. We have seen much progress over the years, most visibly evidenced by the remarkable return of Lake Erie from the "dead". Yet many challenges remain, and it is our responsibility to find innovative and cost-effective solutions to today's complex environmental problems.

According to the EPA, fishing and swimming are not what they should be along a full 90 percent of the Great Lakes' United States shoreline. Picturesque harbors contain contaminated and harmful bottom sediments, and all of our Great Lakes states issue advisories to warn the public of potential health risks of eating too many of certain kinds of Great Lakes fish. This situation is unacceptable.

This year, we have special legislative opportunities to help the Great Lakes environment as Congress takes up the reauthorization of the federal Clean Water Act. With so much of the nation's fresh surface water in our basin alone, we have a keen interest and a high stake in successful national and regional provisions of the Clean Water legislation.

In order to address the difficult problems that continue to plague the Great Lakes ecosystem, I joined with several of my colleagues on June 30, 1993, in introducing the Great Lakes Clean Water Amendments Act of 1993, S. 1183. This bill addresses several areas of need for the Great Lakes, including sediment management, pollution prevention and research coordination.

The Great Lakes Sediment Reduction provision applies the principles of pollution prevention to the sediment problem in the Great Lakes. Currently, excessive loads of sediment migrate to our Great Lakes harbors polluting them and creating high costs for removal and disposal—costs that no one wants to bear. An average of 5 million cubic yards of sediments must be dredged from Great Lakes harbors each year at an expense to the taxpayer of \$33 million per year. About 50 percent of these dredge spoils are so contaminated that they are disposed of in special confined disposal facilities.

This sediment pollution of our harbors need not be a fact of life. The sediment originates upstream as runoff pollution, and to a large extent can be abated there as well. And prevention of sediment pollution in the Great Lakes will save money for all involved: the EPA; the ports and the Corps of Engineers, which are responsible for sediment removal; and even the upstream landowners who will benefit from keeping more of the soil on the land.

The Sediment Reduction provision of our omnibus bill will authorize and direct the US Army Corps of Engineers to map out where this sediment originates on a river system-by-river system basis, and authorizes the Corps to provide technical and financial assistance for voluntary upstream best land management projects that will result in a cost savings in their dredging and disposal operations. I introduced this measure as a stand-alone last Congress, and look forward to enactment as part of the Clean Water Act this Congress.

My Pollution Prevention for Cities Program also builds our ability to stop pollution at the source. This measure will establish a technical assistance program within the EPA for municipalities within the Great Lakes basin to help them comply with new water quality rules in the most cost-effective way possible. The program is targeted at source reduction of toxic constituents in urban runoff, wastewater and stormwater. The measure also authorizes the use of State Revolving Fund monies for municipalities to implement EPA approved source reduction plans. Again, prevention is the most effective and least cost approach to pollution abatement, and cities should be provided with the assistance they need to stop pollution at its source.

The third measure of which I am the Senate author is the Great Lakes Research Coordination provision. This provision will require federal agencies that conduct ecosystem research in the Great Lakes to jointly develop priorities and a coordinated plan for addressing them. This measure will increase the efficiency with which we gather information so important to sound environmental protection decision-making.

I would like to conclude by reiterating my strong support for the Great Lakes Clean Water Act Amendments of 1993; it is a practical, useful and beneficial bill. I urge the Committee to include these critical Great Lakes provisions when marking up its Clean Water Act reauthorization package, and I look forward to working with the Committee in the months ahead. I commend this Committee for making Clean Water Act legislation such a high priority in this Congress. The Great Lakes and our nation's waters deserve such a commitment.

TESTIMONY BY GREG LAUGHLIN, A REPRESENTATIVE IN CONGRESS
FROM THE STATE OF TEXAS

Having grown up on the Gulf of Mexico, and representing the District in Texas with the most coastline along the Gulf, I have long been committed to raising the priority of Gulf issues.

On April 28, 1993, Congressman Sonny Callahan and I introduced H.R. 1899, the Gulf of Mexico Economic and Environmental Protection Act.

The bill has the bipartisan support of 55 members of congress and is the culmination of a four year effort by the Sunbelt Caucus to enact legislation to protect the Gulf of Mexico.

This bill will prevent the Gulf of Mexico from turning into an Environmental Catastrophe, such as the Great Lakes and Chesapeake Bay once were.

It emphasizes the need to improve water quality in the Gulf of Mexico, reduce coastal erosion, ameliorate the economic loss of fisheries in the Gulf, and address other economic and environmental issues.

The Gulf of Mexico Economic and Environmental Protection Act will establish a Gulf of Mexico Executive Board with each member having an equal vote.

This board includes representation from the citizen's advisory committee, local communities, each Gulf State, and each federal agency with jurisdiction over the Gulf of Mexico.

I believe the involvement of coastal elected officials will ensure that those who deal with the Gulf everyday are included in the decision-making process.

Another important aspect of our bill is it ensures that we comprehensively address the economic and environmental issues of the Gulf of Mexico.

I want to emphasize that the intent of this bill is to balance environmental protection with economic progress.

It is high time that the economic and environmental significance of the Gulf of Mexico be recognized.

There are two such programs currently in existence which protect and manage the Chesapeake Bay and the Great Lakes.

Although the Gulf is seven times larger than the Great Lakes and almost 200 times larger than the Chesapeake Bay, the Gulf of Mexico receives dramatically less EPA funding than those two bodies of water.

For example, in 1993, the EPA is spending less than \$5 million on Gulf of Mexico Program activities while spending \$35 million and \$24 million the Great Lakes and Chesapeake Bay Programs, respectively.

Surely a body of water so rich in environmental resources, so rich in economic resources, and yet so impacted by activities that occur as far away as Minnesota should get more federal attention than it has historically.

I want to emphasize the National importance of the Gulf of Mexico, the incredible contribution it makes to our country, and its great environmental value.

For example, not only have oil and gas revenues historically ranked second only to the Federal Income Tax as a revenue source for the Federal Government, but at the same time the Gulf provides critical habitat for 75% of the migratory waterfowl traversing the United States.

We waited until it was almost too late to clean up the Great Lakes and the Chesapeake Bay, are we going to do the same to the Gulf of Mexico?

Are we going to wait until we can no longer fish the Gulf, until Americans can no longer eat good shrimp, to begin comprehensively addressing its problems?

If we do, clean up efforts will end up costing 7 times that of the Great Lakes, and 200 times that of the Chesapeake Bay.

Let me assure you that delay will only compound the problems and the costs of restoring the Gulf to the living jewel that it is.

I applaud the actions of my colleagues from the Great Lakes, the Chesapeake, and other regions for their aggressive and continuous efforts to protect and enhance those national treasures.

Now is the time for us to do our part for the region that contributes so much to our Nation's economy and environment.

In closing, I would like to thank the other co-chair of the Gulf Task-Force, my distinguished colleague and friend Sonny Callahan and all of the other members of the Gulf of Mexico Task Force who have worked so hard in developing this legislation.

Thank you.

STATEMENT OF THE AMERICAN AUTOMOBILE MANUFACTURERS ASSOCIATION

The American Automobile Manufacturers Association (AAMA) submits this testimony for the record of the August 4, 1993 Clean Water, Fisheries and Wildlife subcommittee hearing on regional issues associated with the reauthorization of the Clean Water Act. AAMA is the trade association for the domestic manufacturers of passenger cars and light trucks. Our members, Chrysler Corporation, Ford Motor Company and General Motors Corporation, manufacture approximately 81 percent of all U.S.-built cars and light trucks, and operate 172 assembly and component manufacturing facilities in the Great Lakes States.

This testimony will highlight some of our key concerns regarding the reauthorization of the Clean Water Act, using examples raised by the proposed Great Lakes Water Quality initiative. This regional approach to water quality improvement was authorized by the Great Lakes Critical Programs Act of 1990 and affects many of our members' manufacturing facilities.

The goal of this initiative is a laudable one: to develop comprehensive water quality guidance for the protection of the Great Lakes System. However, AAMA has two serious concerns with the Great Lakes initiative regulations as they have been developed and proposed. First, the proposed regulations lack technical and scientific validity. Second, the regulations do not accurately reflect the small environmental benefit that will result despite the huge economic impact to businesses and municipalities in the Great Lakes region.

EPA is required by the Clean Water Act to develop and publish water quality-based criteria that "accurately reflects the latest scientific knowledge." Many of the Great Lakes initiative standards, in contrast, are scientifically unsupportable and excessively conservative. As a result, many of the standards are an order of magnitude more stringent than necessary.

Regulation of heavy metals such as copper and zinc is a good example of how the proposed standards are scientifically incorrect and overly stringent. In general, heavy metals must be in a dissolved state or bioavailable in order to pose a threat to aquatic life. Toxicity limits should be established using dissolved metals. Studies have demonstrated that metals limits as proposed by the Great Lakes initiative rule are many times more stringent than necessary to protect aquatic life. Despite conclusive scientific information and acknowledgement by EPA experts that the proposed method of translating water quality criteria into permit limits overestimates bioavailability and toxicity, the proposed rules have not been modified. As a result, the proposed Great Lakes initiative Aquatic Life criteria seeks to address problems that do not, in fact, exist.

We are also concerned that these regulations will impose severe economic burdens with only minimal environmental improvement. This is partly because the Great Lakes initiative addresses only industrial and municipal sewage treatment plants which discharge pollutants through pipes, known as point sources. However, it is well known that these sources are not the major contributors of many of the pollutants in the Great Lakes. EPA's own studies show that nonpoint sources, such as air deposition and agricultural and urban runoff, are more significant contributors. Nonpoint sources contribute more than half of the toxic pollutants discharged into the Great Lakes. The most common nonpoint pollutant comes from soil eroded from farms, construction sites and stream banks. Significant improvements in water quality will only be attained if regulatory controls are directed at the sources causing the greatest problems.

AAMA believes that the goals of the Great Lakes Water Quality Agreement will not be met unless EPA prioritizes and directs its regulatory efforts to control pollutant sources which have the greatest impact on the Great Lakes. The lack of a holistic approach places an undue burden on industry, municipalities and the public to minimize pollution, well beyond what is actually necessary. Improvements of the water quality in the Great Lakes will not be realized unless regulatory efforts address pollutants from nonpoint sources, such as agricultural and urban storm runoff.

In addition to these technical concerns and lack of overall environmental benefits, the economic impacts of these regulations will be staggering and anti-competitive. For example, implementation of the Great Lakes initiative will lead to significantly more stringent permit limitations for many of the pollutants commonly discharged from automotive manufacturing operations. In addition, the proposed anti-degradation requirements such as "the no net increase in pollutant loadings . . .", could deter economic expansion in the Great Lakes Basin. Before any existing facility could be expanded, any additional pollutant loadings would have to be eliminated, even if the resultant discharges would be within permit limitations. This proposed requirement would impose an economic disadvantage to a facility in the Great Lakes Region as compared to a similar facility elsewhere in the nation or overseas.

AAMA's member companies will not only be affected by more restrictive requirements placed upon their discharges to the Great Lakes and its tributaries, but will also be faced with stringent and essentially unachievable requirements mandated by the local municipalities through their pretreatment programs. Even the lowering of permit limitations, as applied to municipal discharges under the proposed Great Lakes initiative, will force municipalities to modify their industrial pretreatment programs by significantly restricting the discharges of many pollutants from industrial sources to levels well below the best achievable technology known. In

some instances, pretreatment requirements on industrial source discharges will be more stringent than limitations applied to the municipality, because of the inability of the municipality to control pollutant contributions from domestic sources.

AAMA members have 124 manufacturing facilities, including 20 assembly and 104 component plants in six states within the Great Lakes Basin (89-MI, 16-OH, 2-IL, 1-IN, 4-WI, 12-NY) that are affected by the proposed rules. This breakdown assumes that only those facilities within the Basin are impacted by the proposed regulations; and that Great Lakes states other than Michigan will have "two" sets of water quality standards (i.e., one adopting Great Lakes initiative requirements for Basin dischargers and the other (less stringent) being applied to the balance of the state). If the other Great Lake states choose to adopt the Great Lakes initiative requirements statewide, 48 additional AAMA member facilities may be impacted. These manufacturing facilities are predominately indirect dischargers to municipalities.

The overly stringent requirements proposed by the rules will force AAMA's member companies to apply advanced treatment technologies, such as a combination of biological treatment, softening, reverse osmosis, high efficiency filtration, carbon absorption and reject water treatment, in addition to existing Categorical Best Available Technology equipment. However, even this treatment technology may not be consistently effective for PCBs and other complex organics.

Facilities that discharge stormwater and non-contact cooling water into the Great Lakes Basin will also be required to provide additional treatment. Depending upon state adoption, application of more stringent metal limitations as proposed by these rules will require the installation of multiple advanced treatment technologies (i.e., a combination of biological, media filtration, softening, reverse osmosis and reject water treatment) to reduce pollutant concentrations in rain water and uncontaminated non-contact cooling water from city water supplies. Industry would be forced to treat rain water and city water that has not been impacted by any plant activity. Thus, when discharging only city water with no plant contribution, treatment will still be required prior to this discharge.

The potential capital cost impact of the proposed Great Lakes initiative upon AAMA's member companies in the Great Lakes Basin is estimated at two billion dollars, with annual operating and maintenance costs approaching two hundred million dollars.

To summarize, a holistic approach which sets priorities based on sound science and implements programs using risk-based controls should be the basis for the environmental objectives of both the Great Lakes initiative and the Clean Water Act Reauthorization. AAMA urges the subcommittee to evaluate the economic and social impact of the Great Lakes initiative and apply the lessons learned as you re-draft the Clean Water Act. As currently proposed, the initiative places an unacceptable burden on industry and municipalities in the Great Lakes Basin. Regrettably, in spite of these high costs, there is little expectation that measurable improvement in Great Lakes water quality will result.

REAUTHORIZATION OF THE CLEAN WATER ACT

THURSDAY, AUGUST 5, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES, AND WILDLIFE,
Washington, DC.

FEDERAL AGENCIES; MONITORING; AND OTHER ISSUES

The subcommittee met, pursuant to recess, at 9:35 a.m. in room 406, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham and Chafee.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. Good morning. Today we conclude our current series of hearings, which we have held over the past eight weeks on the reauthorization of the Clean Water Act. We will hold at least one additional hearing in September on the specific subject of wetlands.

This morning's hearing focuses on a number of miscellaneous issues which are important to our review of the act but to which we have not yet been able to give our full attention. For this hearing we have invited representatives of the various Federal agencies which are impacted by the Clean Water Act to share with us their comments on the Clean Water Act generally and on S. 1114 specifically.

The areas of responsibility for these agencies vary greatly. The Environmental Protection Agency is the primary Federal agency with responsibility for much of the Clean Water Act. Accordingly, it is no stranger to the witness table this summer; in fact, we began our series on June 16th with the testimony of its Administrator, Ms. Carol Browner. We look forward to continuing our discussions with EPA over changes to the Clean Water Act, one of the agency's premiere environmental responsibilities.

On July 14th and again on July 21st, this subcommittee focused on nonpoint source pollution and watershed planning as a means of addressing nonpoint source pollution. We were repeatedly told that agriculture is a major contributor to this type of pollution. The Department of Agriculture is here today to discuss a number of its programs that address water quality, and will focus today on the nonpoint source pollution and watershed planning provisions of the bill before us.

Two agencies within the Department of the Interior are here to discuss issues relevant to them. The Fish and Wildlife Service is here to continue our inquiry into physical and biological impacts on our Nation's waters. We will recall the testimony at our first hearing in which a panel of scientists warned us that we must remember that the Clean Water Act should not just concentrate on chemical impact. To the extent that it has, we have seen remarkable successes, though much is still left to be done in the area of chemical impact.

We have also been reminded that dams kill fish, and biological changes impact habitat.

The U.S. Geological Survey is here primarily to discuss with us its monitoring program and how it does and does not coordinate with other monitoring programs, such as those at EPA.

Finally, the National Oceanographic and Atmospheric Agency, or NOAA, is here to talk about coastal programs and its monitoring efforts.

We will then turn to three remaining issues in our second panel. The General Accounting Office has prepared for the subcommittee an assessment of several monitoring issues in response to my concerns about whether the environmental data we collect bears adequate relevance to the decisions that agencies must make. That might be a general question that I would like to place before the agency representatives here today: how does the data which is collected by our various monitoring efforts relate to your needs to make policy and management decisions?

We will follow that discussion with a debate about an important but comparatively narrow issue regarding the right of States to control nonchemical impacts on their waters from certain sources.

Finally, we will learn about water conservation efforts, using as an example the city of Tampa and the lessons that perhaps can be applied nationwide from that municipality's experience.

At the first hearing in this series on June 16th I characterized our schedule as "ambitious." This is the seventh hearing in as many weeks. I commend the subcommittee members and the witnesses for their stamina and the contributions that they have made to our understanding of these complex issues. We received a great deal of advice, both oral and written, as to how we should proceed. We will be studying the lessons we have learned in these hearings over the August recess. I invite those who wish to comment on the bill to make their comments known to the subcommittee so that we might take them into account as well.

Again, I thank the witnesses who are here today. I will introduce the witnesses on the first panel by name and title, beginning with Mr. Jim Lyons, Assistant Secretary for Natural Resources and Environment of the U.S. Department of Agriculture; Mr. Douglas K. Hall, Assistant Secretary for Oceans and Atmosphere, U.S. Department of Commerce; Mr. Dallas Peck, Director of the U.S. Geological Survey of the Department of the Interior; Mr. Michael Spear, Assistant Director, Fish and Wildlife Service, Department of the Interior; and Mr. Robert H. Wayland, III, Director, Office of Wetlands, Oceans, and Watersheds of the U.S. Environmental Protection Agency.

Mr. Lyons has another commitment in the House of Representatives which he must leave to attend, so I am going to ask if he would make his presentation first. I will ask a few questions of Mr. Lyons, then if you must move on, it is your loss that you will not get the benefit of the rest of the testimony. You can read the transcript. Then we will proceed to the other witnesses, asking each in turn to make their presentation, and then I will ask questions, as will other members of the subcommittee as they join us.

Mr. Lyons?

STATEMENT OF JAMES R. LYONS, ASSISTANT SECRETARY FOR NATURAL RESOURCES AND ENVIRONMENT, U.S. DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY JOHN BURT, SOIL CONSERVATION SERVICE; AND WILLIAM McCLEESE, U.S. FOREST SERVICE

Mr. LYONS. Thank you very much, Mr. Chairman. I appreciate the committee's indulgence. Congress is rushing to get a lot done in the remainder of this period of work.

I am pleased to be here to discuss the views of the Department of Agriculture on reauthorization of the Clean Water Act. I am accompanied by John Burt with the Soil Conservation Service and Bill McCleese from U.S. Forest Service, who can address any technical questions you might have.

Water quality, of course, is a cross-cutting concern and has the potential of affecting agriculture and USDA programs in numerous ways. But let me make clear, Mr. Chairman, that while agriculture is a significant part of the nonpoint source pollution problem, USDA intends to be an important part of the solution.

The quality of water from a watershed is influenced by the way we farm, harvest timber, graze cattle, or confine livestock for efficient production. USDA can play a significant role in reducing the effects of these activities on water quality, and this is why USDA must be involved in implementation of the Clean Water Act.

S. 1114 helps provide the support and program direction needed to aid in the maintenance and restoration of the quality of the Nation's waters. The watershed approach is the most effective way nonpoint source pollution can be effectively managed. Today I would like to discuss USDA's experience in water quality, both on privately owned lands and on Federal lands.

First, USDA has numerous programs that have had and are having an impact on water quality on privately owned lands. One such program, the conservation compliance provisions of the 1985 and 1990 farm bills, for the first time linked an individual producer's performance on environmental issues to eligibility for USDA farm program benefits. To remain eligible for USDA farm program benefits, conservation compliance requires farmers to develop and carry out approved conservation plans on highly erodible cropland. SCS has worked with farmers to develop more than 1.5 million conservation compliance plans.

When fully implemented, these plans will significantly reduce soil erosion on some 142 million acres on participating farms in the United States. SCS estimates that fully implemented conservation compliance plans, combined with grass and tree plantings on more

than 35 million acres enrolled in the Conservation Reserve Program, will cut the soil erosion rate on highly erodible cropland in the U.S. by about 65 percent. In areas where sediment is the primary problem, conservation compliance will have the effect of improving water quality.

USDA's National Conservation Program in 1988 established protection of water quality from agricultural pollution as a national priority. As a result, agencies began to redirect resources where possible to address water quality concerns. This resulted in a number of outputs:

First, increased research in such areas as developing predictive models;

Evaluating agricultural chemical transport;

Searching for plant species requiring less pesticides and methods for propagating crops with less use of pesticides;

Improved technical assistance to aid farmers and ranchers in dealing with nonpoint source pollution problems;

Education and information materials directed to farmers and ranchers to make them aware of water quality concerns and provide guidance on how to correct water quality problems; and

Financial assistance, to the extent it has been available, to help farmers and ranchers install cost-effective environmental practices and/or try new methods of farming or ranching.

Today we have about 135 water quality projects across the country. At USDA we have used the program resources and authorities of 15 programs to implement water quality planning and implementation. USDA has also reached out to form partnerships with industry, farm organizations, and with other agencies to help implement water quality improvements. And here, Mr. Chairman, I would like to emphasize the fact that we are doing our best to develop partnerships with producer organizations and with producers themselves to work jointly to address nonpoint source pollution concerns.

USDA is also working closely with EPA on many water quality issues and projects related to agriculture. USDA and EPA have jointly funded Soil Conservation Service staff positions for all of the EPA regional and national offices; provided support to the National Estuary Program; and assisted EPA and NOAA in developing technology-based management measures for the Coastal Zone Management Reauthorization Act amendments. EPA also has two persons detailed to our offices in USDA to help work on nonpoint source pollution concerns.

We firmly believe that partnerships with agencies, the agricultural community, State governments, and local people must be continued and improved. Federal and State governments cannot implement water quality improvements without the support of the local people and the agricultural community. This is a key reason for the watershed approach, and it must be fully supported by all Federal and State agencies. We believe USDA plays a critical role there.

Our experience has taught us some valuable lessons which we think are useful to consider.

First, patience is a critical concern in dealing with nonpoint source pollution concerns. It clearly takes time for water resources to respond to reduced nonpoint source loading.

Second, we need to rely on observable results. Monitoring of physical chemical characteristics of water provides important information for determining the impacts on water quality.

Third, on-farm application is clearly essential. When farmers are able to relate their farming activities to water quality concerns—that is, when they understand how what they're doing is impacting on water quality—we find more often than not that they are willing participants in programs to help reduce or alleviate those impacts.

Fourth, always remember that a delivery system which can implement programs at the local level is critical.

Finally, solutions which come from the bottom up rather than the top down seem to work best.

We recognize, Mr. Chairman, that the nonpoint source pollution problem is enormous; in fact, EPA estimates it will cost \$8.8 billion over 20 years to control agricultural and silvicultural nonpoint sources of pollution. However, we believe the watershed approach is a very sound and effective way to accomplish the objectives of the Clean Water Act and to seek to reduce nonpoint source pollution impacts. However, it will require experience in watershed planning and resource management at the local level to facilitate the process and assist in implementation. The Soil Conservation Service and the Forest Service can clearly assist in providing this kind of guidance at the local level.

We recommend three ways to make the watershed concept work for water quality.

First, we think it is clearly important that the USDA be one of the Federal partners involved in implementation. We have the field staff, the experience, and the multidisciplinary technical skills necessary to supplement efforts already occurring in other agencies to implement this approach. We are, in fact, actively applying watershed management across the Nation.

Second, we think it is critical that the program be flexible. Clearly, in dealing with nonpoint source pollution concerns, one size does not fit all. Flexibility in designing programs and plans to aid local producers or to deal with local management situations when it comes to forest lands is critical.

And third, involvement of local people and institutions is also essential.

If I could, Mr. Chairman, just briefly turn to the activities of the Forest Service, the Forest Service is responsible for managing 191 million acres of forest and rangeland in the United States. In addition, the Forest Service's State and Private Forestry Program works closely with private landowners, affecting millions of acres of land in how they are managed.

The Forest Service is actively involved in research, development, and implementation of management practices designed for the control of nonpoint source pollution and the protection of forested watersheds. The Forest Service has developed a watershed management strategy for protection of nonpoint sources based on two basic components: prevention and rehabilitation.

The Forest Service policy is to comply with all State requirements for protection of water quality in the same manner and to the same extent as a nongovernmental entity. In most States we have developed and are implementing working agreements with the States to achieve this end. Under these agreements the Forest Service is responsible for implementing State nonpoint source water quality programs on the National Forests. Through review of proposed Forest Service programs and monitoring activities, the States are assured that Forest Service programs meet State water quality concerns.

Let me briefly summarize, Mr. Chairman, with some comments on S. 1114.

As I said, we are delighted to see that S. 1114 is taking a watershed approach to help implement water quality improvement programs, an approach that is consistent with our philosophy of managing ecosystems on a watershed-by-watershed basis—an approach, I might add, Mr. Chairman, that is the foundation of the President's recently announced plan for management of the forests in the Pacific Northwest, where an interagency effort is now underway to begin the watershed based planning necessary to address the multiple resource concerns that affect that region.

EPA, in consultation with USDA and others, should provide watershed program requirements for the State to follow. At a minimum, a State watershed plan should list the targeted watersheds; identify water quality concerns in the watersheds; specify a schedule for developing a plan; require coordination with appropriate Federal agencies, including the land management agencies; and identify Federal and State assistance through existing programs.

At USDA we support the farm bill incentive programs and other measures in the 1985 and 1990 acts to help address nonpoint source pollution concerns. In general, USDA is not opposed to a requirement that Federal lands be managed in a manner that is consistent with that required on private lands; in fact, that's exactly what the Forest Service does.

Finally, as I've indicated, USDA supports the emphasis on watershed management as the key to resolving the nonpoint source pollution problems ahead. This is consistent with the direction that the Forest Service and SCS are taking. We think it is a critical direction to address the concerns that we all share.

Thank you very much, Mr. Chairman, for this opportunity to appear before the committee.

Senator GRAHAM. Thank you very much, Mr. Lyons.

As I stated earlier, I am going to ask a few questions of you now, and then we'll move on to the other members of the panel.

You mentioned some of the successes in nonpoint pollution planning, both in the department and in the Division of Forestry. If you were going to go out across the country and look at the best examples of nonpoint source pollution in an agricultural or forestry setting, where would you go? What's the state of the art in nonpoint source pollution control?

Mr. LYONS. I'm afraid I'd be short on specific places to point to. That's one of the things I'm trying to do right now, Senator, is get out and look at our successes and, frankly, look at some of our failures. But I think some of the programs that have been implement-

ed in the midwest, in Iowa in particular, offer some good examples of how working cooperatively with landowners in implementing both the requirements of the 1990 Farm Act with regard to conservation compliance, and using some of the other tools that we have, such as the Conservation Reserve Program to set aside fragile lands, looking down the road to the hope of being able to implement the Wetland Reserve Program which is another mechanism we think can help in addressing these concerns—I think you would see that we are making significant progress in working with landowners to achieve these goals.

Senator GRAHAM. Mr. Lyons, for you and other members of the panel, there may be some follow-up questions on which we would appreciate your response in writing.

I would be interested in some specific addresses of places that we might look at. I have found it helpful in discussing intangible concepts like this to go to the benchmark of where the best practice is actually being implemented in order to convert concept into reality. I would appreciate your recommendations on where your travel agenda would take you, if that's what you wanted to do.

Mr. LYONS. I will be glad to send you a summary of what we have ongoing now, Mr. Chairman, and if appropriate, invite you to come out and join me. We will look at some of these sites.

Senator GRAHAM. Good.

I mentioned that we're going to be talking later with the second panel about some monitoring data and about how adequate and decision-oriented that data is. From your perspective could you comment on the data that is available to the Department of Agriculture to carry out its responsibility?

Mr. LYONS. I would say generally, Mr. Chairman, that we clearly would like to see some improvements in the monitoring data. It makes it very difficult to target programs, to make efficient use of existing funds without solid data on the status of nonpoint source pollution concerns.

I could yield to my colleagues from SCS and Forest Service to talk about the specifics, but let me offer one example.

I think we have found, for example, in implementation of the land management plans of the Forest Service that one of the areas that is clearly lacking is investments in monitoring. Each of the National Forest plans which address, in many respects, water quality concerns, have provisions and has a plan for monitoring; however, we have had a great deal of difficulty in the past in obtaining the funds to implement that kind of monitoring activity.

As I mentioned, in the Pacific Northwest where the President has provided direction for implementation of a new regionwide forest plan, one of the key elements is the development through an interagency task force of the protocols for monitoring impacts of forest management activities on water quality.

Senator GRAHAM. In your statement in a few places you made some positive observations that the programs seem to be having the intended result of improving water quality. How effective is our current data in, first, establishing a baseline of what is the reality of the current state of water, particularly as affected by non-point source pollution from an agricultural source; and second,

after we have implemented our control measures, what effects they have had?

Mr. LYONS. I would say, Mr. Chairman, that our baseline data are not very good. That's a concern. We have been forced to use biological indicators as a measure of performance and a determinant of what we have been able to achieve.

Having good, solid baseline data would help us tremendously in understanding both the impacts of agricultural production as well as those of silvicultural activities. Again, this is one of the things we're looking at in trying to apply this ecosystem strategy in the Pacific Northwest, to determine what those baseline characteristics ought to be as a measure of performance.

Senator GRAHAM. Is there anything that you would suggest—either today, or if you would like to do this subsequently—on what we could do within the Clean Water Act reauthorization in order to give greater attention to monitoring, data collection, the ability to make improved decisions based on management and decision-oriented data?

Mr. LYONS. Well, I'll get back to you with more specifics, Mr. Chairman.

I would say most immediately that in establishing protocols for developing that baseline data, I think a critical element is that the data be developed in a coordinated, interagency fashion, so that whatever database is established to monitor clean water concerns also recognizes some of the other data needs that we have. That way we don't run into a situation where one agency perhaps develops the baseline data for water quality, but it has less utility for some of the activities of, say, the Forest Service and SCS and Fish and Wildlife Service and other agencies.

That approach, a coordinated and consistent approach that allows us all to agree on what the baseline data should be, would do a great deal to help us achieve not only our water quality objectives but some of the other management objectives that we all seek to achieve. So I would offer that concern and that plea, that when we put this together, we do it jointly and that it address multiple concerns in addition to the immediate nonpoint source pollution concerns that we have.

Senator GRAHAM. I would like to submit that question to each of you that you might be prepared to comment on what we can do within the Clean Water Act itself in order to facilitate the objectives that Mr. Lyons has just described.

Mr. Lyons, I know you have to leave at 10:00 o'clock, so we have a couple minutes. Let me ask two questions.

What tactics has the Department of Agriculture employed, from best management practices to land acquisition to wetlands reserve programs, etc.—what have you found to be the most cost-effective and sustainable solutions to nonpoint source pollution in an agricultural setting?

Mr. LYONS. Mr. Chairman, I was saying that it depends on what watershed you're in and what your pollution prevention objectives are. I was going to say that I think the most effective tool we've found is working with farmers and providing them the technical assistance and information necessary for them to understand precisely what impact they're having on water quality.

We have a fairly good-sized toolbox to choose from in terms of the management activities that we seek to put on the ground, and we have a very important stick in conservation compliance. That certainly gets the attention of producers, but I think we've found that, again, producers who have come to understand how their activities may be impacting on water quality are more likely to seek assistance. Where additional financial incentives or cost-share assistance might be available, we are able to get practices in place on the ground. But I think having a big toolkit, if you will, is essential so that we can perhaps, for a given landowner, offer technical assistance to, say, change cropping practices to reduce impacts on nonpoint source pollution, but in areas where we have a significant problem, be able to offer a set aside program like the Conservation Reserve Program or a long-term easement program like the Wetland Reserve Program.

Having that capability and being able to go out on the ground with landowners and tailor a plan to address their particular pollution concerns is critical and I think probably the most cost-effective mechanism we have.

Senator GRAHAM. Mr. Lyons, I appreciate your testimony today. I wish you well in the House of Representatives. We'll be back in touch with you on some of those questions and maybe we'll have a chance to visit the places that you would designate as state of the art.

Mr. LYONS. I look forward to that. Thank you again, Mr. Chairman.

Senator GRAHAM. Great. Thank you, sir.

Mr. Hall?

STATEMENT OF DOUGLAS K. HALL, ASSISTANT SECRETARY FOR OCEANS AND ATMOSPHERE, U.S. DEPARTMENT OF COMMERCE

Mr. HALL. Thank you, Mr. Chairman.

I am glad to be here today to discuss the role of NOAA in meeting the challenge of restoring the quality of our Nation's waters. Senators Baucus and Chafee have introduced a reauthorization package that provides a new framework within the Clean Water Act, and NOAA strongly endorses this restatement of goals and strategies, to include protecting and restoring ecosystem health.

With this emphasis, NOAA's scientific capabilities and technical expertise become even more relevant to the Clean Water Act and more significant in meeting the water quality goals of the Nation. This shift to a comprehensive and integrated perspective will enable us to focus on cumulative, systemic causes of environmental decline rather than individual impacts. Focusing management, planning, research, and monitoring on entire watersheds is particularly critical for the coastal and marine ecosystems under NOAA's stewardship. I will focus on four major themes in the proposed legislation that highlight NOAA's role in protecting the health of the coastal ecosystems. These include the watershed management approach, regional partnerships, stronger controls on nonpoint source pollution, and the need for research and monitoring.

NOAA strongly supports the addition of a new section to the Clean Water Act to encourage comprehensive watershed manage-

ment. NOAA is acutely aware of the effects of poor watershed planning and management, sometimes occurring tens or hundreds of miles inland, on the coastal and nearshore resources, of which we are stewards. We believe that continuing loss and degradation of habitat is the greatest long-term threat to the viability of commercial and recreational fisheries, the protection of marine mammals and endangered marine species and the preservation of our coastal zone and special protected areas.

A new strategy based on protecting and restoring living resources that includes full upstream watershed planning and management, as well as downstream ecosystem management, planning, research and monitoring is needed to turn the tide on coastal degradation and deal with environmental problems before they become environmental crises. Under several existing programs and authorities, NOAA is incorporating the principles of watershed protection in the management of marine resources.

The Clean Water Act has fostered many regional programs directly related to NOAA's trust and stewardship responsibility for fishery habitat and coastal zone management. NOAA participates in Federal-State partnerships coordinated by the Environmental Protection Agency, in particular the 21 National Estuary Programs and the three Great Waters Programs, the Chesapeake Bay, the Gulf of Mexico, and the Great Lakes. While EPA's strength lies in its water quality protection authorities, NOAA's strength lies in its coastal zone, habitat, sanctuary and reserve, fishery management, research, and monitoring responsibilities.

The partnership approach in the National Estuary Program and the Great Waters Program builds on each agency's strengths to create truly comprehensive action plans. This partnership is evident in NOAA's establishment of a Chesapeake Bay Office to enhance our contributions to efforts on cleanup and restoration of the Bay. In Florida, NOAA is developing an overall ecosystem management plan for the Florida Keys National Marine Sanctuary in cooperation with the State of Florida, EPA, the Interior Department, other Government agencies, commercial fishermen, environmentalists, recreational user groups, and the public. EPA, which is responsible for the water quality protection component of the plan, could be aided by components of S. 1114.

NOAA is committed to participating in these ecosystem-based restoration and protection programs. These types of regionally based cooperative efforts, organized around a specific watershed, will be at the forefront of environmental issues in this country and should be an extension of the watershed management approach proposed in S. 1114.

With regards to nonpoint source pollution, NOAA believes that tackling the problems of nonpoint source pollution provides the greatest opportunity we have to impact profoundly this Nation's coastal environment in the next century. We strongly support strengthening the existing section 319 programs under the Clean Water Act. Given the work today on coastal nonpoint programs under section 6217 of the Coastal Zone Management Act Reauthorization Amendments of 1990, we believe that it is very important that amendments to section 319 of the Clean Water Act be compatible with and enhance these programs. Consistency between the

State coastal nonpoint programs and the State section 319 programs will undoubtedly bolster both efforts.

We are now six months into the thirty-month statutory time-frame for States to develop and submit their coastal nonpoint programs, and we are finding general support for the goals of section 6217. We consider the improved dialog and coordination between coastal management and water quality agencies at the State level, as well as the Federal level between NOAA and EPA, to be one of the early successes of this program.

We would like to see this coordination continue and be strengthened through amendments to section 319. Increasing national attention on nonpoint source pollution will support the efforts already underway by the coastal States.

On research and monitoring, NOAA believes that any new legislation outlining management, watershed, and ecosystem perspectives must include appropriate monitoring and research, and we appreciate the Chairman's leadership in this area. We must be able to define, detect, and understand ecosystem health criteria in order to identify real risks, track progress, or adapt management strategies along the way. Each of these are essential ingredients to economically sound and environmentally effective management. This is a very large task, and its undertaking clearly exceeds the limits of resources and expertise of any single agency.

The goals of the Clean Water Act could be met more quickly and efficiently by ensuring that Clean Water Act—related monitoring and research data, information, and expertise from all Federal agencies are coordinated and used, where appropriate. There are many opportunities for NOAA's research capabilities to support the broadened goals of the Clean Water Act. NOAA and its academic partners conduct interdisciplinary research programs in virtually all aspects of environmental quality and coastal ecosystem health.

NOAA's existing capabilities for monitoring the marine environment also offer a considerable opportunity for supporting Clean Water Act goals. The National Coastal Monitoring Act of 1992, which mandates the development of a national Federal and State monitoring program to assess the status of coastal ecosystems of the United States, has expanded NOAA's historic responsibilities. NOAA and EPA are currently developing a joint strategy for carrying out the responsibilities mandated by the act.

NOAA believes that there clearly should be a mechanism to coordinate Clean Water Act-related research efforts across the environmental agencies. We recommend the use of existing interagency mechanisms, such as the Intergovernmental Task Force on Water Quality Monitoring and the Coastal, Ocean, and Water Resources Subcommittees of the Federal Coordinating Council on Science, Engineering and Technology.

In conclusion, we strongly support redirecting the Clean Water Act to better protect ecological resources by emphasizing biological criteria for decisionmaking. The watershed approach will assist NOAA greatly in our efforts to protect fisheries and other marine resources from the impacts of development and watershed draining in the coastal waters. Consistency between Clean Water Act nonpoint source pollution requirements and those contained in section

6217 of the Coastal Zone Act Amendments will strengthen the efforts already underway in the coastal States.

NOAA offers strong capabilities in research and monitoring of marine, coastal, and Great Lakes environments, a critical component of ecosystem protection and restoration.

Thank you, Mr. Chairman. I will be glad to answer any questions.

Senator GRAHAM. Thank you, Mr. Hall.

Mr. Peck?

STATEMENT OF DALLAS PECK, DIRECTOR, U.S. GEOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY PHILLIP COHEN, CHIEF HYDROLOGIST AND CHIEF, WATER RESOURCES DIVISION

Mr. PECK. Thank you, Mr. Chairman. It is a privilege for me to appear before you today as you consider the issues of watershed management and monitoring. I am accompanied by Mr. Phillip Cohen, who is sitting right behind me. He is the Chief Hydrologist of the U.S. Geological Survey's Resources Division.

My testimony today will emphasize those aspects of the U.S. Geological Survey's programs that most directly pertain to the objectives of coordination, monitoring, and assessment. I have included a more complete description of our activities in my remarks for the record, and will only summarize them today.

Some of the difficulties in using available information to describe the Nation's water quality conditions include the differences between agency procedures; the tendency to carry out measurements where problems are suspected; and the small number of sites with long records of constituents of recent concern. Even so, we believe that improved Federal, State, and local monitoring efforts, together with our new national assessment programs of the USGS and other Federal agencies, will provide the support needed to achieve the objectives of the Clean Water Act, as well as other statutes.

Turning to the matter of coordinating Federal, State, and local monitoring activities, water data collection responsibilities are dispersed at all levels of Government and the private sector. The successful establishment of improved coordination and cooperation promises to improve greatly the availability of reliable monitoring information and water quality assessments.

The Office of Management and Budget, recognizing the need to improve the coordination of water information programs, established the Water Information Coordination Program in December, 1991, under OMB Memorandum M-92-01 (See Attachment 1). The U.S. Geological Survey, through the Department of the Interior, is responsible for implementing this program. This program builds on over 25 years of experience coordinating water data under OMB Circular A-67.

In January, 1992, the Water Information Coordination Program established the Intergovernmental Task Force on Monitoring Water Quality, chaired by Elizabeth Jester Fellows of EPA, to evaluate water quality monitoring activities in the U.S. and to recommend improvements. The report to OMB on the first-year's activities of the task force outlines a proposal to carry out a national

strategy to enhance water quality activities and to better support management decisions.

USGS and EPA are working closely together to support the Intergovernmental Task Force with outstanding cooperation from others, such as NOAA and the U.S. Department of Agriculture. I am confident that the task force and resulting activities will improve the effectiveness of our monitoring and assessment programs across the board. A very important aspect of improving programs involves working with State and local agencies, as well as the Federal Government.

With regard to monitoring, the USGS has been actively engaged in assessing and monitoring the Nation's water resources for many years. For example, our stream-gaging network began operation over 100 years ago, and ground water, surface water, and precipitation data are now collected on a routine basis at over 45,000 sites across the Nation. Water resource managers at all levels of Government rely heavily on the information from these sites.

Two USGS programs have major status- and trend-monitoring components that directly or indirectly support Clean Water Act objectives. The Federal-State Cooperative Program has been in operation for over 100 years. This 50/50 jointly funded program is a unique partnership between the USGS and 1,000 State, regional, and local government agencies to enhance water resources information nationwide. The goals of the program are to collect data and develop information, and to use that data and information to appraise the availability, distribution, and characteristics of water resources.

The National Water Quality Assessment (NAWQA) program is describing the status and trends in national water quality and is identifying the factors affecting water quality. NAWQA provides specific water quality information to those individuals who set policy, write regulations, establish priorities, or manage water resources. To meet its goal, the program will integrate water quality information on a regional, local, and national scale. We start one of the NAWQA areas in south Florida this fall.

We expect that these USGS monitoring and assessment activities will contribute to the Nation's ability to evaluate the extent to which programs undertaken pursuant to the Clean Water Act are helping us to achieve a better environment.

That concludes my formal testimony, Mr. Chairman. I would be happy to respond to any questions you may have.

Senator GRAHAM. Thank you very much, Mr. Peck. We will have some questions at the conclusion of the panel.

Mr. Spear?

STATEMENT OF MICHAEL SPEAR, ASSISTANT DIRECTOR, FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF THE INTERIOR, ACCOMPANIED BY DAVID DENSMORE, ECOLOGICAL SERVICES; AND TIM KUBIAK, ECOLOGICAL SERVICES

Mr. SPEAR. Thank you, Mr. Chairman. I appreciate this opportunity to appear before you regarding the role of the Fish and Wildlife Service in the Clean Water Act. I am accompanied by Dave Densmore and Tim Kubiak of our Ecological Services staff.

The Service's interest in the Clean Water Act stems from our stewardship responsibilities for endangered species, migratory birds, anadromous fish, and several marine mammals, all of which depend on clean water to survive. The Service also has trust responsibilities for over 90 million acres of lands in the National Wildlife Refuge System. Clean water is essential to maintaining these refuges, as well as to operate our system of national fish hatcheries.

The Service has several authorities for direct involvement in the Clean Water Act activities, including the Fish and Wildlife Coordination Act, the Endangered Species Act, and the National Environmental Policy Act.

The Service has also developed wide expertise in the evaluation of man's effects on living natural resources. This expertise lies not only in our research program, but in our network of over 700 field stations throughout the country. We believe that our authorities, in conjunction with our field experience, can enhance effective implementation of the law.

Since it was first passed in 1972, the Clean Water Act and its subsequent amendments have resulted in substantial improvements in the quality of the Nation's waters and a reduction in the rate of loss of our Nation's wetlands. We believe that the programs established in the Act are sound, but as with any program, they can be improved.

The goals of the Clean Water Act are to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In the past, implementation of the Act has focused on the chemical integrity of those waters, with less effort on biological and physical integrity. This focus is changing, and we are ready to assist EPA and others by providing technical assistance and consultation on biological resource issues.

At present, 97 of the 775 species of freshwater fish native to the United States are listed as endangered or threatened, along with 63 mussel species, 12 crustaceans, and 11 amphibians. Clearly, if the status of these species is an indicator, the biological diversity of our Nation's aquatic systems is still being threatened. It makes sense, both ecologically and economically, for a society to make every effort to prevent species from reaching such desperate status as to require listing as threatened or endangered. As Secretary Babbitt has frequently noted, managing an entire ecosystem for harmonious development is far more prudent than having to undertake drastic measures to save an endangered species that will undoubtedly have serious economic impacts on those living in that ecosystem.

One means to present this is by protecting wetlands. Many freshwater, anadromous, and estuarine fish species, more than 50 percent of North America's migratory birds, and more than one-third of all threatened and endangered species are dependent on wetlands.

Another means is through development of water quality criteria and standards that reflect needs of aquatic resources.

The Service's biological expertise can be used to enhance implementation of the wetlands provision of the Act and the development of Federal water quality criteria and State water quality

standards. With early coordination, problems can be identified before they reach a level too difficult to resolve. For instance, seeking better water quality standards—and thus better section 402 permits—is more effective than dealing with contaminated sediments after the discharges have ceased.

Preventing further degradation of the waters of the United States through more effective implementation of antidegradation policies and through protection and expansion of our outstanding natural resource waters are also important to meeting the goals of the Clean Water Act.

The Service has been involved in numerous watershed restoration efforts around the country, such as the Great Lakes lake trout restoration and watershed restoration activities on the Clinch River. We can lend our experience and expertise in any watershed or river basin planning activities that may be established in the future.

The Service is obtaining data on the health of trust resources across the Nation. Let me share an example of our effort.

Our ongoing investigations in the Great Lakes watershed have confirmed that certain contaminants continue to threaten colonial waterbirds, as well as bald eagles, with reproductive problems, including deformities. This spring, while monitoring eagle reproductive success, our field personnel located three nestling eagles with beak defects common to colonial water birds nesting in the Great Lakes.

I have brought a photograph of one of these eaglets, showing its deformed beak.

Senator GRAHAM. Where was that picture taken?

Mr. SPEAR. This might have been taken in a lab, but the eagle came from Lake Erie.

I have brought a photograph of one of these eaglets, showing its deformed beak. These young birds have been collected and are undergoing further evaluations. We found that adult eagles which feed on Great Lakes prey have lower reproductive success than eagles feeding on inland lakes and rivers. Eagles nesting along the Great Lakes continue to have significantly higher levels of several contaminants, as measured in their blood and egg samples, than inland eagles.

Our National Wildlife Refuges are being directly impacted by water quality programs. At Salton Sea National Wildlife Refuge in California, based on surveys in 1992, an estimated 150,000 eared grebes died by April of that year, about 8 percent of the North American population. Contaminant analyses of eared grebes indicated elevated levels of selenium, mercury, DDE, and chromium in eared grebe livers, when compared to previous samples from the Salton Sea. Selenium has increased over 200 percent in three years. Endangered species that may be at risk include the Yuma clapper rail, the California brown pelican, the desert pupfish, and the peregrine falcon.

Prior to the 1970's, the average annual loss of wetlands was approximately 450,000 acres. Between the mid-1970's and mid-1980's this loss rate was reduced to approximately 290,000 acres per year. Although there is no question that enactment of section 404 of the Clean Water Act—and more recently, the Swampbuster provisions

of the Farm Bill—have contributed to the positive trend, wetlands destruction continues at a high rate.

I would like to provide one more example of how wetland habitat losses, like other Clean Water Act-related issues, have affected species populations.

California's vernal pool wetlands have sustained a significant and continuing loss from agricultural conversion, flood control activities, and residential and commercial development activities, much of which is currently being authorized through nationwide general permits. As a result, recent estimates indicate that 99 percent of the original vernal pool habitat in the Central Valley has been lost.

As a consequence of these losses, the abundance and diversity of plant and animal species has declined. Currently, ten vernal pool plant species are listed as endangered, while 55 species are designated as candidates for possible Federal listing.

Since its inception, the section 404 regulatory program has substantially reduced the harm to wetlands and other aquatic habitats due to development activities. Nevertheless, losses to fish and wildlife resources continue in spite of the program. We must take a broader view of what is needed to meet the goals of the act and recognize that wetlands protection must always be a part of this approach.

I thank you and the committee for providing this opportunity for discussion of the future direction of the Clean Water Act. Our field force in the Fish and Wildlife Service stands ready to provide technical assistance and consultative service to EPA and the States in meeting our Federal trust resource responsibilities.

Senator GRAHAM. Thank you very much, Mr. Spear.
Mr. Wayland?

STATEMENT OF ROBERT H. WAYLAND, III, DIRECTOR, OFFICE OF WETLANDS, OCEANS, AND WATERSHEDS, U.S. ENVIRONMENTAL PROTECTION AGENCY

Mr. WAYLAND. Good morning, Senator Graham. EPA is delighted to be here again this morning, having participated in several of the earlier hearings. My task today is to focus particularly on monitoring and Federal agency cooperation.

Each of these is extremely important to realizing the ambitious goals of the Clean Water Act. Each will strengthen, and in turn be strengthened by, the watershed management philosophy advanced in S. 1114, advocated by Carol Browner in her initial testimony before you and endorsed by witness after witness over the past eight weeks.

Although we weren't able to present our detailed testimony on watershed management due to the large number of witnesses you needed to accommodate, I hope very much you will have an opportunity to review that EPA statement, which has now been submitted to the committee.

Monitoring is critical to how well we manage our programs and how we measure progress toward our strategic goals. It is our continual feedback loop, vital at all scales, national, State, tribal, local, watershed, and site-specific. We monitor for a variety of purposes,

and our programs must meet several different purposes which call for different monitoring designs. These include identifying and evaluating status and trends of our environment; diagnostic and problem identification-oriented monitoring, such as is conducted in the first phases of our National Estuary Program, or even on a site-specific scale in effluent toxicity testing associated with individual dischargers; evaluating program or project effectiveness, and emergency response.

Many agencies, public and private monitor; but we need to work closely with them to pool our water resource information and make the best use of our limited public and private resources.

The mechanism that we are using to try to accomplish that coordination, which Dallas Peck alluded to earlier, is the ITFM, which we co-founded with USGS, which we chair and on which USGS serves as vice-chair and provides the executive secretariat function. Ten agencies participate in ITFM, as do ten State and tribal governments.

Senator GRAHAM. Excuse me, Mr. Wayland. I would like to impose a rule, and that is that when an acronym is used the first time, it is stated in full, and after that it can be used in its shortened form. ITFM is—

Mr. WAYLAND. Yes. As Dr. Peck said in his statement, it's the Interagency Federal Task Force on Water Quality Monitoring.

Senator GRAHAM. Everyone is expected to remember that.
[Laughter.]

Mr. WAYLAND. I will certainly heed that advice.

As I said, ten agency representatives and ten State and tribal governments serve on the committee. It is in turn supported by a public advisory committee. It has subgroups on institutional collaboration; indicators; field and laboratory methods; information management and sharing, as well as assessment and reporting.

In the Clean Water Act context, strong State monitoring programs are crucial to us. States do much of the monitoring on which we rely, and about 15 percent of their Clean Water Act program support grants—the so-called 106 grants—are devoted to monitoring. Precisely half of the membership of our monitoring coordination effort is provided by States, and we are working with them as well on a consistency work group to try to make their data and reporting more comparable, as required under section 305(b) of the Clean Water Act. Twenty-one States and seven Federal agencies are represented on this work group.

Moreover, we are working with the States more generally on monitoring guidance to help ensure minimum State monitoring program elements.

Our monitoring supports the strategic directions that we're establishing. We are ensuring that our strategic plan has goals which can be evaluated through monitoring data and other assessment techniques, and we are working closely with our partners and other Federal agencies to draw upon information that they collect and manage to evaluate our progress.

"Monitoring program" is really a short phrase for a continuum of linked activities from sample collection with appropriate methods, to lab analysis, data storage and analysis, quality assurance, and quality control, all of which needs to be conducted in an appro-

priate way to support the actions of decisionmakers. The specific actions that we have underway at present are the development of methods, protocols, and guidance, most particularly for biological assessment of streams. We are working on one for lakes and estuaries. We are moving toward the use of more sophisticated data techniques, such as geographic information systems and remote sensing, including the recent commitment to purchase by the end of this fiscal year of LANDSAT thematic satellite mapping information, which is an effort that we have underway with the other agencies represented here at the table.

We are also involved in a broader EPA-wide environmental monitoring management council which works to make comparable the different monitoring methods of different programs so that we can share data more easily among programs.

We are engaged as well in an EPA-wide effort to develop a strategic plan for information resource management, data storage and retrieval. The STORET, which is short for storage and retrieval system, modernization effort which we have underway is intended to take the largest water quality database in the country into the 20th century. At present this system allows us to manipulate some 290 million data points.

We issue a biennial report to Congress, the 305(b) report, as I have mentioned, the only report that describes how well the Nation is meeting its water quality standards and goals. We are working with the States to try to make sure that these data are reported in a more consistent and comparable fashion.

We also support volunteer monitoring very strongly, citizen monitoring. It has two very important values. It helps inculcate a sense of stewardship on the part of the participants and educates them about the importance of water quality and the impact of their actions on water quality, and it can provide useful data, if properly quality-assured.

The foregoing illustrates the mutual dependence and enhanced degree of cooperation among agencies. Fiscal realities and environmental imperatives are breaking down historical barriers. I can say that in my 20 years at the Environmental Protection Agency I have never seen the level of cooperation that we are now enjoying with our partner agencies.

We can also point to this kind of cooperation in areas in addition to the monitoring area, some of which have been touched on by earlier witnesses, in the policy and program development and program implementation areas. To mention a few of these briefly, Mr. Hall was with me, as was Phil Cohen, Dallas Peck's colleague, at the meeting in south Florida recently which you gave a generous amount of time to, to discuss how we can more effectively protect an entire ecosystem. Several of us are engaged in a Coastal America partnership to try to realize protection and restoration of vital coastal resources. The Pacific Northwest Forest Plan has been mentioned, as has the cooperative EPA-NOAA-USGS efforts to implement the Coastal Zone Act Reauthorization Amendments and bring about a more robust nonpoint source pollution program for our coastal areas.

I could enumerate many others but I see that the red light is on, so let me just say that in all of these endeavors we are seeking to

establish—and we are proving to ourselves—that our combined authorities, expertise, and institutional strengths can create a whole that is greater than the sum of its parts, and increase the return on limited Federal resources. We welcome the added impetus that S. 1114 provides to these endeavors.

Thank you.

Senator GRAHAM. Thank you very much. This has been a very instructive panel and I appreciate the obvious effort that each of you committed to the statements that you have delivered today. I will make a couple of other comments, as I said to Mr. Lyons; there may be written questions from other members of the subcommittee, as well as from me. I would appreciate your response to those.

Let me start with the same question I asked Mr. Lyons. In the areas of responsibility of each of you, if you were going to direct someone to what you think is the state of the art, the benchmark of effective programs, where would you send them? For instance, Mr. Peck, in terms of the Geological Survey, what place in the country would you say you would be the proudest of in terms of the information that you have gathered and the utilization of that information for enhanced decisionmaking?

Mr. PECK. There are a couple of recent basins that we have studied under the National Water Quality Assessment Program, NAWAQ. We have conducted several pilot projects; one of those was the Yakima Basin, where we worked very closely with—

Senator GRAHAM. Yakima, Washington?

Mr. PECK. Yakima, Washington.

—with the EPA, the State EFA, the Indian tribes, the State health agency, and with others. We found that elevated levels of DDT and its metabolites in the water were a problem, even though DDT was outlawed 20 years ago. It turns out that DDT was remaining in the soil under the orchards, washing into the stream, polluting the stream, contaminating fish, and ending up in eagles and other birds.

Working with the State agencies, one can come up with plans to decrease the erosion from the old fields, and hence decreases the levels of DDT. Furthermore, the State health agencies issued warnings for eating fish, so there was an immediate practical effect. We have a nice, popular publication on the Yakima DDT problem.

Senator GRAHAM. I would appreciate if you would submit it. We might include it in the record of this hearing.

Mr. PECK. It's short and it is popular.

[The publication referred to has been received and is retained in Committee files.]

Mr. PECK. We also concluded a study of the Delmarva Peninsula, where the issue is nitrates and pesticides related to the poultry culture and farming. And we analyzed the movement of nitrates and pesticides through the groundwater into the streams, and the effect of that movement on rules and regulations used to decrease pollution into streams. We also worked very closely with the Economic Research Service of the U.S. Department of Agriculture; they would gather detailed pesticide data on farms, and then we would analyze the groundwater pollution related to that pesticide.

So again, there is a nice, popular publication, short, that I would like to introduce for the record that explains the findings from that study.

[The publication referred to has been retained in Committee files.]

Mr. PECK. I think we can anticipate through our National Water Quality Assessment Program a number of specific findings that will be important nationally, as far as pesticide regulation, and also important locally as far as solving immediate problems.

Senator GRAHAM. Good. Mr. Peck, we look forward to including both of those reports in the record of this hearing.

Any other members of the panel who would like to suggest—I am asking this question, in part, in terms of planning some activities for this subcommittee later in the year. We would like to visit some of the areas that would give us a hands-on example of what might be accomplished for the rest of the country if all can achieve what the best have achieved.

Mr. PECK. Could I make a suggestion? The Department of Agriculture, through the Agricultural Research Service, has a series of pilot projects. They are called MSEAs, and I apologize, I can't for the life of me remember what MSEA stands for.

Senator GRAHAM. Then under our previously stated rule, you are prohibited from using that acronym.

[Laughter.]

Senator GRAHAM. They call it Management System Evaluation Area.

Mr. PECK. That's what it is.

Anyway, they are farm-sized plots where the Agricultural Research Service, in cooperation with us and a number of other local and national agencies, carry out a number of different kinds of farming practices. They plant the rows close together or far apart, or they put a little bit of pesticide or a lot of pesticide, and then we monitor the water quality of the runoff. So it is a good experiment to determine the practical effect of water quality management practices.

Another neat area where we're working very closely with the Department of Agriculture is near Deep Springs, Iowa; it's in the very northeast corner of Iowa. It's a Karst terrain with a very deep spring—well, actually it stands kind of high, so maybe it's above the flood. But it's a good example where agriculture is doing a lot of things to avoid erosion and trying different application rates of agricultural chemicals, but you can sample effects on the water quality in the springs themselves; thus, you can monitor what's going into the groundwater from your agricultural practices, how much nitrate, how much atrazine, and so on and so forth. So that's another good practice.

Senator GRAHAM. Thank you.

Mr. Hall?

Mr. HALL. Senator, it may be a couple of years, after you go to all the places that Mr. Peck has referred to, but if you have any time left after that, we have a couple of suggestions, too.

One would be Monterey Bay, which is really a model of cooperation between the Federal Government, the State government, and nonprofits, and I think the private sector plays a major role there

in protecting that watershed. We have a marine sanctuary through NOAA's program, through the National Ocean Service. I think that would be a good place to go.

Another would be North Carolina, which has a particularly strong nonpoint source pollution program. I think that they could be a model for the rest of the country in the way they deal with these programs.

Senator GRAHAM. Yes. At one of our recent hearings we had a representative of the State of North Carolina testify on what they had done. It is a very impressive record and, I think, an example and model for other States and communities.

Mr. HALL. Just one other thing that you might want to look at in terms of monitoring, which you have a lot of interest in, would be the Chesapeake Bay, where we have been using remote sensing data through LANDSAT. That is really a prototype in terms of examining land use there in that watershed, and using that to have a direct impact on the management decisions being made in that watershed.

Senator GRAHAM. In a moment I want to return to that question of satellite utilization as part of the monitoring effort.

Any other recommendations for our travel plans?

Mr. WAYLAND. Mr. Chairman, my prepared statement referred to the Upper Arkansas River Watershed Initiative in Colorado, which we think would offer some interesting insights into the problems associated with abandoned mines and creative partnerships developed to address those among agencies here, as well as the private sector.

We also suggested that the Canaan Valley Watershed would be another useful site for a field trip, a very unusual ecosystem with some unusual types of nonpoint source pollution, including sedimentation from an offroad vehicle race which, in one of the true examples of "picking the low-hanging fruit," the management entity, if you will, for that watershed worked to identify some changes in the configuration of the race course which would be highly beneficial in terms of water quality management. This is the kind of observation that never would have come, quite frankly, from looking at tables of SIC codes and gross information on pollutant loadings from different types of sources.

Senator GRAHAM. I have two questions. The Canaan Valley is—

Mr. WAYLAND. West Virginia.

Senator GRAHAM. And SIC codes—

Mr. WAYLAND. Canaan was not an abbreviation.

[Laughter.]

Mr. WAYLAND. It's simply a place name that I didn't establish too carefully.

SIC is Standard Industrial Classification. That is used quite widely in trying to characterize the extent to which individual types of enterprises on average contribute to pollution.

Senator GRAHAM. Good. Thank you.

Mr. SPEAR. Mr. Chairman?

Senator GRAHAM. Mr. Spear, you get the last shot.

Mr. SPEAR. Mr. Chairman, I would like to reiterate the comment made by a couple members of this panel already. Right here in our

back yard, the Chesapeake Bay Program, led by EPA and supported by other Federal agencies, is probably one of the best examples in the world a program beginning to pay some results. You shouldn't have to go too far when we have something right in our back yard.

I would also like to call your attention to something that Assistant Secretary Lyons mentioned. The biggest effort in this regard is going to be undertaken in the President's Northwest Forest Plan, where the whole management of those forests in the future will be based on provincial plans which are then broken down into watershed plans. So while your committee is continuing this development of the new law, the administration will be undertaking a massive watershed planning and improvement approach that hopefully is consistent with the concepts that you are bringing forth in this law.

Senator GRAHAM. Mr. Fodor may publish his book on traveling to Europe; I think we may publish our book on environmental travels in the United States. I would hope that we might have the same financial success.

We have now been joined by the ranking member of this committee and one of the cosponsors of the bill that we have been discussing today, Senator Chafee of Rhode Island.

Senator Chafee, any questions, comments, or observations?

Senator CHAFEE. No, Mr. Chairman, and I apologize for being late.

You are a hard-driving taskmaster. How many of these hearings have you had?

[Laughter.]

Senator GRAHAM. Seven.

Senator CHAFEE. Each one has been very good. I am afraid you've left me panting behind you, trying to keep up with this pace. I regret that I wasn't here earlier. I'm sorry I missed this panel, but I will talk with our staff about what everybody said and review the testimony and look forward to—have you about finished with this panel?

Senator GRAHAM. I have a couple more questions.

Senator CHAFEE. OK, fine. I will look forward to the next panel.

Senator GRAHAM. Good. Thank you, Senator.

Senator CHAFEE. No one can say you're not being indefatigable in the pursuit of truth here.

Senator GRAHAM. Today it has been in the pursuit of acronyms.

[Laughter.]

Senator GRAHAM. I would like to ask a series of questions relative to the adoption of a watershed management approach, as distinct from what the focus has been in the past that I would, for summary purposes, call a "process approach" to fulfilling the national responsibilities for clean water.

What will be the difference in the type of information that we will need to collect in order to answer some of the questions that a watershed approach will require us to respond to? For instance, under the legislation of Senator Chafee and Senator Baucus, the issue is unimpaired watershed. Do we have enough data now to be able to identify the state of impairment of watersheds, and there-

fore be able to pursue the kind of prioritization of efforts that this legislation will call for?

I ask that as an example of the kinds of questions that this approach is going to require us to answer.

Mr. WAYLAND. Mr. Chairman, if I could just take a first pass at it, I really do think that we at present collect a great deal of information. It is not always easily accessible in forms useful to management decisionmakers, whether they're trying to make decisions on a national scale or at the watershed scale. I think an important challenge for us is to try to improve our ability to manage and rely on that information.

I firmly believe that in many watersheds it will be manifestly apparent when we stand at the foot of that basin and look around us that there are problems that can be addressed through practicable and affordable means, without the need for substantial and additional and more sophisticated data.

Having said that, as a first round, if you will, of "low-hanging fruit" that may be picked by applying this approach, we clearly do need to have information management and modelling tools that are applicable at a watershed scale, where we have tended not to employ those in most of our nationally based water quality management schemes.

Our suite of water quality standards is somewhat limited in terms of indicators of biological health. We are able to establish, for example, an aquatic life criterion, adopted by a State as a water quality standard, which tells us how much of a particular pollutant is lethal to certain indicator species of fish. But we have further work to do to establish criterion and standards that will tell us when we have a truly balanced and healthy indigenous population of fish as opposed to a lethal level of a particular pollutant. I think that's part of the evolution that we have underway.

Senator GRAHAM. Do you have any comments, either for today or for supplementation, on how the reauthorization of the Clean Water Act could facilitate advancing our ability to be able to get the kind of information that this new approach of watershed planning will require?

Mr. WAYLAND. Yes, Mr. Chairman, I would be happy to provide something at greater length.

Mr. WAYLAND. But just very briefly, I would say that the approaches that are advanced in S. 1114 to strengthen State monitoring requirements, we think, are generally very helpful. In addition, as I think all of us have said earlier, continuing cooperation among the Federal agencies that collect and store data so that it is accessible and usable is very important. I think we have a good start on that without the benefit of a legislative push, but I think that continued efforts along those lines are very important.

Mr. HALL. I would just reiterate what Mr. Wayland said. In terms of consistency, there is a lot of data out there, but in terms of making sure it is collected in a consistent manner—in many of these areas the collection of the data is the responsibility of the States. I think that in focusing on that area, the committee could make a lot of progress and help us in our work.

Senator GRAHAM. What I have found in my State, and I don't think it's atypical, is that collection tends to be for a specific pur-

pose. If you have a sewer plant, you have some collection of data to assess the quality of the effluent coming out of that plant. If you want to ask a different, broader set of questions about the quality of the river or bay or whatever that sewer plant is discharging into, you generally run into a blank wall because those were not relevant to the purpose for which the monitoring was being done. I might say personally, my major involvement in this issue has not been in the environment, but rather in education. The typical accreditation of a school, for instance, asks the question, "How many books do you have in the library?" So we collected data on how many books were in the library. If you wanted to ask a slightly different question, did anybody read any of the books in the library, or if they did read them, did they have any contribution to the enhanced education of the reader, no data was collected, so you couldn't get any answers to those questions.

I think we are now trying to ask some of the questions not just of how many books are in the library—i.e., what chemicals are coming out of that pipe—but rather, what is the effect of all of that on the broader question on the health of the watershed that we are attempting to protect?

I think the challenge is to have a system of information that will support our policy and management goals.

Mr. Peck?

Mr. PECK. Yes. I might comment on a couple of things.

One, I think that the drainage basin approach is a very good one. It is important in doing that to gather the monitoring data, but then to build a model, a computer model, so that you can simulate the impact of different changes, changes in land use and that sort of thing, on water, quality and water quantity. It is important to have land use data and the use of geographic information systems. The coordination of data standards are important.

There is an important activity underway across the Federal Government, the Federal Geographic Data Committee, where Federal agencies are all working closely together to develop geographic data standards.

I will say that one potential problem with the watershed approach is one that was found by John Wesley Powell, the second Director of the Geological Survey. He advocated that the west be organized by watersheds rather than by latitudes and longitudes. That was not accepted. You will find that organizing activities by watersheds, as you know far better than I, is politically difficult.

As far as recommendations on the Clean Water Act are concerned, I would like to pass on a couple of ideas.

One is that we think we're doing very well with the Water Information Coordination Program and the Interagency Task Force on Water Quality Monitoring. But recognition and support of these activities by this committee, and particularly our efforts to reach out to State and local organizations through that activity, are very important.

Second, I think that perhaps you need to think about addressing groundwater as well as surface water in the act. On the average, 40 percent of the flow in streams is from groundwater, and pollution of groundwater is going to affect the quality of water in streams; and it's going to do it, perhaps, many years later. Groundwater

flow is a very slow process. So I think that you need to look at the whole system when you address water quality.

Thank you.

Senator GRAHAM. Yes, Mr. Spear?

Mr. SPEAR. Mr. Chairman, I would like to bring out a slightly different approach.

The Fish and Wildlife Service has for years collected what we call "biomonitoring data." In other words, rather than going out and sampling the chemical factors in the water, we actually collected birds and fish, sampled them for chemicals, and then studied those birds and fish and their various types of diets to see how those organisms might be affected by various levels of contaminants.

That work was largely carried on for years under the Migratory Bird Treaty Act, or other acts, to look at the health of species.

I think what has been apparent throughout a lot of the testimony today, and I'm sure you've heard it elsewhere, is that we now need to have that organized in a different way and put a lot more focus on the biological effects of clean water or not having clean water.

So I would say that there is a need for legislation that ensures that there is a large biological component to any monitoring.

In the Department of the Interior, that sort of development of a biomonitoring component, which is part of other monitoring systems as well as what the Fish and Wildlife Service does, is coming together under the National Biological Survey. So I think we're going to have a home for that sort of activity, working with other Federal agencies, but it is the biomonitoring part of the thing that has never been supported anywhere near the way that the chemical monitoring has been done.

So if we're going to be able to look at the impact on wildlife as an early indicator for other species, then that part of the program is going to have to be supported, as well.

Senator GRAHAM. Who is the Chair of the interagency group?

Mr. PECK. Elizabeth Jester Fellows.

Senator GRAHAM. I wonder if we might ask if you could present the question that I've been asking, which is what if any changes we should incorporate in the Clean Water Act in order to meet the new monitoring and data requirements? And a second question, which is what you think it's going to cost in order to carry that out, so that when we come back in the fall to start our final markup we could have your best assessment of those questions.

Ms. FELLOWS. We would be glad to do that.

Senator GRAHAM. Good. Thank you very much.

Your name is—

Ms. FELLOWS. Elizabeth Jester Fellows.

Senator GRAHAM. Elizabeth Jester Fellows. And you are with?

Ms. FELLOWS. I am with EPA.

Senator GRAHAM. Would the record note that Ms. Fellows has committed herself—

[Laughter.]

Senator GRAHAM. I have one last question which I alluded to earlier, and that is the use of some of the remote sensing data. Both Senator Chafee and I happen to serve on the Intelligence Commit-

tee. One of the things I have been interested in is that we have this large investment in understanding the world for a military and security purpose; to what degree can that technology be applied to enhancing our knowledge of these types of issues? That raises questions of utilization of historic data which is currently classified, for nonclassified purposes, and in the future redeploing some of our resources to different applications.

What do you think is the potential in that area?

Mr. PECK. Could I comment?

Senator GRAHAM. Yes, Mr. Peck?

Mr. PECK. As you are aware, stimulated in part by the interest of the Vice President when he was a Senator, there is an effort going on to look across the board at the application of classified source material to environmental problems. Included in that effort is looking at the application of remote sensing to the definition of wetlands. Many of the agencies involved here, both the EPA and the Geological Survey, have been actively involved in that effort.

There are several ways that remote sensing can be applied to the definition of wetlands. There is a good experiment going on. Earlier I mentioned the Federal Geographic Data Committee. Under that committee, there is a subcommittee on wetlands, chaired by Bill Wilen of the Fish and Wildlife Service. The subcommittee has been carrying out an effort to compare the definition of wetlands by different agencies using different definitions. They have picked 10 counties from across the country to test. The first one in the Delmarva Peninsula. Each one of the agencies classifies the wetlands, sometimes using remote sensing. Then the USGS, using Geographic Information Systems, compares those, with the delineation of wetlands as defined by EPA, NMFS, NOAA, the Fish and Wildlife Service, the USGS, and determines where they differ and why they differ.

One of the best approaches to wetlands delineation was by the State of Maryland, using not satellite data but color infrared data in order to help define wetland areas. Multispectral scanners on satellites like SPOT and LANDSAT also have a lot of application for detecting wetlands. Other satellite data that can record changes in land use, like development of suburbs or commercial installations on what once were wetlands, are another useful way of tracking trends in wetlands.

Mr. HALL. Senator, NOAA has been in this area for a long time. They have been working hard to make use of existing satellite data and are working with the Defense agencies and others to look for new opportunities. The importance of this data can be demonstrated just in the recent developments in the midwest, where we've had a flood that has caused the levels of nonpoint source pollution in the Mississippi River Basin to be higher than at any time ever measured. We are tracking the movement of that fresh water, which will cause problems even without the pollutants, in the Gulf of Mexico. We are tracking the effects of that through satellite data. I think it offers tremendous promise for us to determine many changes there.

We have a program where we distribute remotely sensed data to eight regional nodes; this data is then used by State and local coastal resource managers, both in the area of changes in land use

and also in ocean color. The use of ocean color is something we are still looking at to determine all of the possibilities, but we have already related that to the management of endangered species and different changes in water quality, to better define eutrophication and the quality of those watersheds. So this is an area where I think, as we get more and more data, we will be able to do more and more for the States and local governments.

Senator GRAHAM. Yes, Mr. Wayland?

Mr. WAYLAND. Just to supplement that very briefly, it certainly is the case that land cover is extremely important in looking at possible sources of nonpoint source pollution. On the other end, just to supplement what Mr. Hall said, in terms of looking for indicators within the water bodies themselves of their health, in the Chesapeake Bay we have looked at seagrass bed viability and recovery as one of the indicators of ecosystem health for the Bay. I think it is an application that may also be available in looking at Florida Bay. As well, we have been able to look at algae blooms and their frequency and occurrence as another indicator of whether we have a problem and what the nature of that problem may be.

Senator GRAHAM. I spent Monday on Florida Bay with some scientists who are doing some research. One of their concerns about this satellite technology is that it is very expensive for users, such as academic institutions, to gain access to material that is freely available.

Is that a legitimate concern? And if so, is it something that we might be able to ameliorate?

Mr. PECK. If I might comment, there have been complaints that satellite imagery from the commercial organization that is running LANDSAT is expensive and prevents academics from using it. Partly as a result of that concern, Congress passed and the President signed the LANDSAT Amendments Act—that's not the exact title—that mandated construction of LANDSAT 7 by the Defense Department and its operation by NASA. The data will be distributed by the USGS, and those data will be distributed basically at the cost of distribution. So there is some hope for improvement over the next couple of years—and that the price of LANDSAT data will gradually approach that level over the next couple of years. NASA, Eosat, and USGS are working together to achieve that result.

Mr. HALL. Senator, one of the efforts that we're making through NOAA's National Oceanographic Data Center is to distribute images and data collection sets that we think would be useful to coastal managers. In your State, at Florida Bay, we are providing a lot of satellite data on Florida Bay to the State of Florida. But we strongly feel that the cost should be confined only to the cost of reproduction for these types of purposes. There are other commercial purposes in different situations, but we have invested a lot of money to collect this data and we should make the best use of it. The free flow of data is a very strong principle that we support.

Senator GRAHAM. Gentlemen, again, we very much appreciate your contribution and look forward to hearing from you further.

The second panel consists of Ms. JayEtta Hecker, U.S. General Accounting Office; Mr. Roger Woodworth, President, International Hydropower Association; Ms. Hedia Adelsman, Water Resources Program Manager of the Washington Department of Ecology, rep-

representing the Western Governors Association; and Ms. Wendy Nero, Water Conservation Manager for the City of Tampa.

Ms. Hecker, several months ago we requested that the General Accounting Office do a study on the status of monitoring, one question being the degree to which data collection was focused on assisting in enhancing management decisions. I appreciate your efforts in assisting in the preparation of that report, and we look forward to hearing a summary of your conclusions.

STATEMENT OF JAYETTA Z. HECKER, DIRECTOR, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT INFORMATION SYSTEMS, GENERAL ACCOUNTING OFFICE

Ms. HECKER. Thank you, Mr. Chairman. I am really pleased to be here to support your deliberations on reauthorization of the Clean Water Act, and specifically to address issues related to the collection, dissemination, and management of the water quality data.

Let me just highlight the two observations I have today.

One is, and I think you've clearly recognized this in the questions you've been posing, that inconsistencies in the management of the data and incomplete and inadequate data have severely limited the assessment of water quality. That's why, after nearly \$500 billion of expenditures on water pollution abatement since the 1970's, it really still remains unclear where that investment is really benefiting us, what the state of the Nation's water quality is, and where the priorities really ought to be for the next steps.

The existence of this very severe problem with data quality is a fundamental problem that needs to be addressed, and we certainly applaud your attention to this issue.

The second point I want to make is to support the observations made by the previous panel, that very noteworthy efforts are underway, both within EPA, across the agencies, and in a number of the other agencies, although we haven't specifically evaluated them. They are promising; they are in early stages, but I think we will share today some concerns about the formidable nature of the challenges that are really before these agencies and the significant costs that we think may not have been brought out today to overcome the significant data problems.

Let me just start by focusing on the issue that there is an abundance of water quality data, but that it's difficult to use and is quite narrowly focused. I think you have heard that there are over 10 Federal agencies—and, more interestingly, over 165 separate Federal programs—that collect or manage water quality data. The problem is that most of them are not really collecting the data to support the managerial and decisionmaking concerns that you have raised, but more often than not are data repositories and have not been designed to focus on the needs of the watershed management approach, the pollution prevention approach that we're talking about today.

So despite the volume of data that is available, there are significant problems in trying to share or exchange or aggregate the data. It's incomplete, it's incompatible, and a very important factor is that it's often of questionable quality. Someone may be able to use it, but they don't really know what kind of considerations went

into the collection of it and what kind of validity problems may exist.

Recently we completed a report for Chairman Synar in the House on the Geological Survey's National Assessment of Water Quality. This is known as the NAWQA program. That report clearly observed the magnitude of the data management problems and the problems that the Geological Survey was facing in trying to integrate and use data from State sources, local sources, and multiple Federal agencies. In fact, just to create a baseline of the water quality in only 45 percent of the United States, it is taking 16 years, it won't be done until 2002, and it will cost over half a billion dollars. So I think that points out clearly that while people are trying to be cautionary, and although we're all working together and we're agreed that this is a problem worth focusing on that it takes substantial resources to really overcome the significant problems with the way data has been collected, the focus it has had, and the lack of any standards and consistency in that data.

So that's kind of the baseline of the magnitude of the problem that I think everyone stipulates to, but is perhaps not recognized as so significant.

I will quickly summarize the other points so that we have time to have a few questions in this area.

We do want to recognize the significant efforts in EPA to address and try to resolve these water quality data problems. We're not saying anything that EPA doesn't know, but again, our concern is that they are in the early stages, and the resources are real questions that ought to be examined.

EPA is also moving to modernize their information systems. Our view is that these environments are primarily just to improve user access to data. We are concerned that there really isn't a linkage to overall water quality goals. We found it difficult to see how these systems are being reengineered when their goal-setting effort isn't even finalized. The basic principle of good information design is that they are built around established, agreed-upon goals that the top of the organization is already committed to; yet this is happening only simultaneously in the organization. This modernization has been underway for two years. I might also note that it is funded within existing resources and has very, very little money to be devoted to this effort.

Another issue that you've expressed concern about is the use of remote sensing technologies. The real benefit that we found is for a more complete and timely understanding of land use changes that impact watersheds. That's really where you get the value of the use of remote sensing technologies. In addition, another important use is safer inspection of toxic accidents and spills.

We think it is important to put it in context, though, that at least with current technology, remote sensing technologies are definitely not a substitute for the direct labor-intensive data collection and analysis of water samples. So there are limits to its use, although they have appropriate uses.

There is a call by the Office of Technology Assessment, OTA, for better coordination in that area for civilian uses of remote sensing. We certainly think that is a recommendation that makes sense. It is mirrored by our own review of EPA's use of remote sensing.

There is no strategy within the agency, let alone coordination with other civilian agency uses in a way that OTA thought was really necessary.

The final area that we looked at was the Interagency Task Force on Monitoring, the ITFM. We endorse their efforts and think they are well focused. It is a commendable effort which shows promise for Government-wide improvement. But I was surprised that the previous panel didn't call for some clarification of the relationship of the Water Quality Monitoring Council that your legislation calls for, with the existence of the ITFM. We think that when Elizabeth Fellows gives you her comments, hopefully you will get some clarification of how the council you are calling for might relate to the existing group. The existing group is certainly much broader in its participation; I think they have far more States and localities, and even Indian tribes, involved. Your legislation calls for a specific composition.

However, in our view the benefit of the legislation is that it is a clear legislative endorsement for what right now is a voluntary effort.

Second, the legislative mandate or direction would undoubtedly promote more high-level involvement. It is, in our view, at a rather low level across the organizations. While that is a good level to get work done, you really need to see more commitment and involvement at much higher levels. We think the legislation would probably result in that.

The final observation of the potential benefit of the legislation in this area is that hopefully it would lead to increased stability in funding and increased stability in staffing of the organization. Right now it's completely voluntary. There are very few people on it on a full-time basis. Given the magnitude of the task that they face, the legislative mandate might increase the attention to it.

In summary, then, information and the quality and the structure and the standards that are used for information and monitoring data are clearly critical factors in the planned moves to watershed management and pollution prevention. Without significant and focused and well-supported efforts to improve the data, we believe that there will be significant problems in achieving those objectives of improvements in our water quality improvement efforts.

We have some ideas beyond that, but I might leave it for questioning of what we think some of the priorities are from here.

Senator GRAHAM. Thank you very much, Ms. Hecker.

The next two witnesses are going to give us somewhat the pros and cons of a specific issue, which is the role of the States in the siting of hydroelectric facilities. Although the order had Mr. Woodworth first and then Ms. Adelsman, since Ms. Adelsman is representing the Western Governors Association she might be able to frame this in the public policy context, and then we could have Mr. Woodworth comment from the perspective of affected users of hydroelectric resources. So I would like to suggest a reversal of the order, with Ms. Adelsman first.

STATEMENT OF HEDIA ADELSMAN, WATER RESOURCES PROGRAM MANAGER, WASHINGTON DEPARTMENT OF ECOLOGY, REPRESENTING THE WESTERN GOVERNORS ASSOCIATION, ACCOMPANIED BY CRAIG BELL, EXECUTIVE DIRECTOR, WESTERN STATES WATER COUNCIL; AND KRISTON DILLON, WESTERN GOVERNORS ASSOCIATION

Ms. ADELSMAN. Good morning. Thank you, Mr. Chairman and Senator Chafee. My name is Hedia Adelsman. I am the Water Resources Program Manager for the Department of Ecology. I am also a member of the Western States Water Council.

I have been asked today to testify on behalf of Governor Mike Lowry from the State of Washington, who is also a member of the Western Governors Association. With the Western Governors Association and the Western States Water Council, we actually work together to provide leadership in developing regional solutions in 18 States on water issues. I have been involved extensively in most of their water-related activities. I am pleased to represent the State of Washington, the Western Governors Association, and the Western States Water Council to testify on section 602 of S. 1114. My written statement was provided to you with copies of the positions of both the Western Governors Association and the Western States Water Council.

Let me say that it is not very often that I do come to the other Washington. Until you actually fly over five hours, you don't realize the distance and realize the impact that the distance represents. So I am very pleased to be here to express the interests of both the State of Washington and the other States.

Like several other States, the State of Washington has a significant hydropower development. Over 75 percent of our energy production comes from hydropower. Hydropower is a major economic resource to the State. We also have an extensive and very sophisticated water resource management program which is used to govern all water uses and related matters, including water quality. The department that I work for actually has the water resources and the water quality within the same department, and we work very hard to integrate both issues.

I think it is very critical that the States do exercise appropriate jurisdiction with respect to all beneficial uses of water, including hydropower generation. While section 401 actually extends the Federal license and permits to any Federal license and permit activities, my comments will be mostly concentrating on the licensing activity of the Federal Energy Regulatory Commission.

Let me first start by saying that no one—and I could speak for all States—no one questions the need for the exercise of Federal jurisdiction in the licensing of hydropower projects. I think the Federal Power Act establishes a strong Federal role. It also appears to define the States' significant role as well, and we have seen that role actually expanding over the years.

While my statement does provide some background on State and Federal jurisdiction in hydropower licensing, again, my comments will focus mostly on the 401 certification of hydropower under the Clean Water Act. It is a mandate that was delegated by Congress to the States to carry out. The States have viewed the certification

procedure as an appropriate recognition of State jurisdiction over water resources. It is a view that we believe is consistent with Congressional intent.

Most of the hydropower industry, however, has taken a much narrower view of State control, and I am here today to describe why a clarifying amendment, like section 602, is actually warranted.

The Clean Water Act, as you know, authorizes the State to issue or deny certification or to condition certification based on certain appropriate provisions. The breadth of the State's certification is based on various provisions of the Clean Water Act. However, the heart of that certification is really section 303, which deals with the State's water quality standards.

Application of the State certification process has proven to be very difficult over time. While there is some agreement that the States should have an important role, there was disagreement as to the scope of the 401 certification, with some of them seeing them as narrow and chemical water quality parameters. I was very pleased today to hear a lot of emphasis on other parameters besides chemicals.

The challenges to the scope of the States' review have really led to court battles. Some decisions have held against expansive States' roles in the Clean Water Act. However, others have held in favor of the States. I would like to give you a very recent example in the State of Washington. Our State Supreme Court has correctly held that actually the breadth of State certification under 401 should not be limited only to chemical parameters; rather, the Court found that the Washington Department of Ecology, the agency I work for, could condition its certification of a hydropower project on maintenance of an instream flow in a portion of the river that would be affected by the project. The Court found the instream flow to be a proper condition in the water quality certification. The Court also stated that inasmuch as issues regarding water quality are not separate issues from water quantity and flow, then an instream flow is a proper condition in the water quality certification.

Let me say that in the State of Washington the experience has been that we have had rivers, in some cases, with bypasses for over 50 years, where the fish disappeared and the habitat was completely wiped out. Through the water quality certification and the requirement of bypass flow, the fisheries are coming back. This is consistent with efforts in the Northwest by both Federal agencies, tribes, and the States to restore and maintain the fishery resources, and to—very importantly—avoid any further listing of endangered species. We think that that's going to be a critical problem. It is really beyond the spotted owl, when you start to talk about the salmon and the implication of that.

You may ask why we are supporting section 602 if our courts actually decided that we could do this under the existing legislation. Actually, we feel that it is important because it would clarify the result that the Washington case has come up with, and would make it appropriate in other States, especially in light of the conflicting court decisions. The amendment itself would settle the area of conflict by clarifying Congressional intent. The States should act in partnership with FERC to protect the water quality of the

Nation, and in trying to meet its mandate under the Clean Water Act.

Originally I thought I was going to come after Mr. Woodworth, who is also from the State of Washington; actually, it is interesting that we both come from the same State to testify on the issue, maybe a little bit on opposing sides. But I will go ahead and, given that I've read his testimony, actually present some of the argument—or at least present our views of some of the argument—that will be presented.

You may hear that section 602 is actually unsound because Federal preemption is necessary in hydropower licensing so that FERC, as a single agency, can balance the many conflicting public uses involved in hydropower. When actually examined in the broad context of water management, however, this argument is rather calling for special treatment of energy production instead of just fair treatment among all the other uses.

The States have carried out the premiere role in water resources management in the west, and Congress has repeatedly deferred to the State authority in this regard. As Federal interests have increased, this system of dual jurisdiction that would actually enable both the Federal Government and the State government to protect their legitimate interests has been developed and is evolving. This system is functioning very well in many programs.

Actually, opponents of the dual jurisdiction don't seem to be able to present any evidence that this system would not be able to work or that it is not in the public interest.

Also, and this is really hard for us to think of this—for them to argue that the State should now have a very limited role in time, where we actually try to expand the State's role in trying to bring the State into a partnership, is to say that the State has virtually no legitimate interest in this area in protecting the designated use and water quality. Far from being the case, the argument simply overlooks the ability and the expertise that the State water management effort has had in balancing the various goals.

The States are very close to the issue and they are ideally situated to deal with the very issues.

You also may hear that FERC is already addressing the State issues, either through comprehensive planning or through the Electrical Consumer Protection Act requirement that the project be consistent with State comprehensive planning. The difficulty with this assertion is that FERC really does not do comprehensive planning. It is not really equipped to adequately consider protecting all competing uses. Also, FERC has failed, in the opinion of the States, to give the deference to State water planning that was envisioned in the Electrical Consumer Protection Act.

So we feel strongly that neither the FERC comprehensive planning nor ECPA actually is an adequate substitute for the State water quality certification compliance.

The final argument is that FERC is a necessary arbiter in dealing with possible interstate conflicts. I should say that these conflicts are rare. In many cases they are within the State, and in other cases they can be resolved through existing mechanisms.

In conclusion let me say that the broad authority under section 401, and under the amendment, section 602, would not preclude

FERC from exercising its jurisdiction, but would assure the opportunity to protect legitimate States' interests. The amendment is very consistent with the policy statements that are contained in the document that you have and supported by the 18 governors and the Western States Water Council officials.

We are in support of this section and we feel that it is needed because it does provide the clarification that will avoid any further confrontation.

Senator Baucus and Senator Chafee have both rightly recognized in the provision of this bill, in its entirety, that State-based watershed planning and a more holistic means of managing water resources are necessary, and also to go beyond just the chemical, but also to get into some of the biological in starting to really look at integrating the various means. We feel that this section provides us with the tool to do that.

So we support this amendment and really urge that it be enacted as part of the Clean Water Act reauthorization, and we would like to commend the committee for actually introducing it.

I will be more than glad to answer any questions, either related to the State of Washington or to the Western States Water Council or the Western Governors Association. I do have here with me today Craig Bell, who is the Executive Director of the Western States Water Council, and Kriston Dillon, who is a member of the staff of the Western Governors Association.

Thank you, Mr. Chairman.

Senator GRAHAM. Thank you very much. I apologize; it's Adelsman, M-A-N?

21Ms. ADELSMAN. Adelsman, yes. But you said my first name very well.

[Laughter.]

Senator GRAHAM. In this business, being 50 percent right is pretty good.

Mr. Woodworth?

STATEMENT OF ROGER WOODWORTH, PRESIDENT, NATIONAL HYDROPOWER ASSOCIATION, WASHINGTON, D.C.

Mr. WOODWORTH. As Ms. Adelsman has referenced, I am from the State of Washington. I work at the Washington Water Power Company in Spokane in the State of Washington. I have had a rather interesting career myself, first as a fish and wildlife biologist, then into hydro licensing administration, dealing with the Federal Energy Regulatory Commission and the licensing process around hydro facilities, and then on into business strategy and management. But today I am here as a representative and in my capacity as the President of the National Hydropower Association; NHA is how I will refer to that as I go forward.

NHA is the national voice for the entire hydropower community. We represent public and investor-owned utilities, independent developers, and others who provide supporting services. We are an industry that is entrusted by the Nation through the licenses that we receive to steward and take care of the waterways which we develop for those interests that we ultimately serve; and those interests are, of course, the public.

It is in this context that I am here today, and that is to discuss the impact of the proposed reauthorization, this bill on federally licensed hydropower facilities and the important public interest implications that it poses.

I might also mention today that while I am here for NHA, the views that I will summarize for you from the written testimony are also shared by the American Public Power Association, the Northwest Hydroelectric Association, and I believe also the Edison Electric Institute.

Let's begin with some basics. The Hydropower Association is very pleased to be here today, to have this opportunity to provide our comments on this very important topic of section 401, specifically, how that plays out with respect to the energy issues of our industry. We are also very pleased with this draft of the bill as a starting point because it demonstrates a good effort to begin to coalesce the very diverse interests, as you are about to hear, that occur around this particular issue of section 401 and other issues in the act. Please do know that the members of NHA are very supportive of the protection of clean water and the achievement of healthy waterways, and support your efforts in reauthorizing this act.

Hydropower is not a polluting energy technology. There are no byproducts that it emits that need to be dispersed into our air. There are no byproducts that need to be disposed of in our land.

With respect to the use of water, it simply takes water from a river, spins a turbine with it, generates electricity, and returns the water to the river. This is not to say that it does not have water quality implications. When the water is returned to the river, it is returned without waste and without chemicals. The water quality implications that there are occur with respect to the storage of water and the regulated release of water; this occurs not only with a hydroelectric facility, but also with any dam that would be constructed.

Fortunately, there are techniques or methods that can be used to ameliorate those adverse effects and assure the maintenance of State water quality standards. So we are not working from a vacuum here; there are ways that these issues can be addressed and are addressed.

As project owners, our members are committed to working closely with State and Federal interests, and the other authorities responsible for these issues, with the objective of serving a very broad public interest. To that end, the comprehensive approach that is proposed in S. 1114, to maintain ecological integrity of the waterways and the surrounding watersheds—quite simply, it's a great idea. The more comprehensive we can be in considering the multiple interests around those uses of waterways is to our advantage and the advantage of our customers and the public.

The challenge will be to be sure that we don't end up with regulations or statutes that become duplicative or, worse, are conflicting. This will be the crux of the issue between what Ms. Adelsman has shared with you today and what I will share.

To work, a holistic or comprehensive approach in S. 1114 needs to take account of other equally vital interests that the Nation

holds, particularly where the issues are subject to comprehensive regulatory authority, such as under the Federal Power Act.

Let me turn to the Clean Water Act. Under it, the State water quality agencies do have the authority to require that the construction and continued operation of any hydroelectric project will maintain State water quality standards. And when properly construed, this process distinguishes between the authority to protect water quality and the authority to mandate or exclude a particular use of the waterway.

The former is within the authority of the State to protect; the latter is not. This approach is complimentary and integral to the comprehensive assessment of all beneficial public uses of the waterway, and that is a responsibility that Congress, starting in 1920 and continuing since then, has vested in the Federal Energy Regulatory Commission on rendering any hydroelectric licensing decision.

In contrast, S. 1114 proposes to extend section 401 authority beyond the maintenance of water quality to include authorities to allow for the protection, attainment, and maintenance of designated uses that are included in the standards. We are very appreciative of the States' desires to control both the quality and the uses of waterways in the States, but the added degree of control is neither necessary nor appropriate with respect to the regulation of hydroelectric development, particularly given the critical Federal interests that are involved in the use of the Nation's waters.

Ms. Adelsman's written testimony candidly explains that this issue is one of jurisdiction: who decides, as opposed to just how the health of the waterway is achieved. She made reference to some specific cases, the Tacoma case and others, and we need to note that the Tacoma case, while cited as Ms. Adelsman has described, is not the only case out there on this topic. There are many that contradict it, just as there are others that are supportive of it. The issue and the conflict are around jurisdiction, not how water quality or whether water quality is achieved.

In making licensing decisions under the Federal Power Act, the FERC is required to consider all beneficial public uses of the waterway. This is key when we talk about a comprehensive or holistic approach to waterway management. In this case with FERC, those beneficial uses include energy conservation, navigation, irrigation, flood control, water supply, water quality, water use, fish and wildlife protection, recreational opportunities, and other aspects of environmental quality, not to mention our national energy supply needs.

With respect to hydropower, the Federal Power Act should continue as the forum for adjudicating questions of competing waterway uses. Why? The simple answer is that ceding its authority to the States would fracture the carefully integrated Federal and State authorities that now encompass the current regulatory process.

In recognition of the States' interest—again, as Ms. Adelsman has alluded to—the Federal Power Act process and other Federal statutes have been expanding States' influence quite heavily now in that process, in the process for licensing hydroelectric facilities. But the approach that we have now does give full effect to the pur-

poses of the Clean Water Act, and importantly, it assures full consideration of the States' interests and preserves the intent of Congress that Federal interests in the use of the waterway will be regulated in service to the broadest public interest.

The States' interests in the use of the waterway are legitimate, there's no question about that, and they must be accommodated. But those interests should not, however, serve as a pretext for empowering States to provide or encumber waterway uses which are otherwise supportive of Federal interests.

Unfortunately, S. 1114's proposal to grant State water quality agencies the power to maintain and protect State-designated uses would have precisely that effect.

Senator CHAFEE [assuming Chair]. The red light is on, Mr. Woodworth.

Mr. WOODWORTH. I am at my concluding paragraph, if you would like me to finish.

Senator CHAFEE. Sure. Go right ahead.

Mr. WOODWORTH. As you proceed with reauthorization of the Clean Water Act, we urge you to do so in full recognition of these broader Federal interests in addition to the maintenance of water quality.

My written comments address other concerns of the hydropower industry regarding reauthorization of the act, and of course we will continue to work constructively with this committee and others on these and other issues.

My final note in closing, the approach of S. 1114 to resource protection has recognized the need to expand its scope to encompass entire watersheds and ecosystems. In so doing, an expanded scope of consideration is called for. Perhaps it goes without saying, but this is a critically important piece of legislation. It deserves to be crafted, in light of the broader universe of economic energy supply and other compelling public needs that we as a Nation must serve.

Thank you.

Senator CHAFEE. OK, fine.

Ms. Nero?

STATEMENT OF WENDY NERO, WATER CONSERVATION MANAGER, CITY OF TAMPA, FLORIDA

Ms. NERO. Good morning, Senator Chafee.

Senator CHAFEE. Do you have a statement? I don't seem to have a copy of yours.

Ms. NERO. No, this came about at the last minute through Senator Graham's staff. I would be happy to provide a written statement when I return to Florida.

Senator CHAFEE. OK, fine.

Ms. NERO. Good morning, Senator. I am pleased to be here on behalf of the Water Department of the City of Tampa. I will present our water conservation efforts and provide brief comments on the water conservation features of S. 1114.

The City of Tampa is a community of approximately 500,000 residents. In 1989, we provided approximately 76 million gallons of water a day. The water conservation program was created, largely as a result of rapidly growing population and a 27 percent increase

in water demands in about a five-year period of time. This, coupled with prolonged and severe droughts in our State and our region led us to create a conservation program at that time, was an emergency response measure. It was intended to simply stretch the available supplies until we could develop new alternatives.

This is a situation that is very, very common, which we are seeing more frequently across the country. It is not limited just to Florida. However, after a few years of implementing our short-term program, it became apparent that it was a valuable long-term water management tool and is now a permanent part of our water supply planning initiatives.

We have a comprehensive program that relies on economic incentives, regulations, and education. These together motivate water-efficient technology usage, as well as encouraging conservation behavior. Our program targets single and multi-family residential customers, commercial, and institutional customers as well.

Now I will go into a few features of our conservation program.

One of the technology-based efforts that we have in place is residential retrofit. We have approximately 90,000 homeowners who have nonefficient or water-wasting fixtures in their houses. We will have provided water-saving kits, as of the end of 1994, to all of these residents. Each kit includes shower heads, faucet aerators, and displacement devices for the toilets.

Senator CHAFEE. Don't go too fast. You supply these shower heads?

Ms. NERO. Yes, sir, we do. We package these kits and provide them free of charge to our residents. This is a fairly short- to mid-term measure; however, it does result in approximately a 12 percent savings inside the home.

A second program is considered more of a permanent-type fix. Again, we're focusing on bathroom uses because they comprise about 80 percent of residential water use inside the house. We have a toilet rebate program. This is a program where we provide a cash incentive, up to \$100 for each water-wasting toilet fixture that a resident replaces with one that is considered a low-consumption model.

Senator CHAFEE. How many gallons is that?

Ms. NERO. The low-consumption model? Approximately 1.6 gallons or less. There is new legislation that comes into effect January 1st, 1994, mandating this across the country. However, our program is designed to motivate homeowners to replace their fixtures sooner than they ordinarily would. That's a cash incentive program.

Another program we have features landscape water use and irrigation systems. In Florida our landscapes require supplemental irrigation, not only seasonally but all year long, which makes us different than most other parts of the country. In this program we offer landscape audits and irrigation evaluations free of charge to institutional customers, residential, and multi-family properties. In addition, we provide them with a free rain shutoff device which keeps their sprinkler from running when enough rainfall has occurred. That is common in Florida, seeing that we get 52 to 55 inches of rainfall in the Tampa Bay area.

Education is also fundamental to our success. We have a three-pronged approach to education. Number one, we feature in-school programs. This is critically important so that we have an educated public down the road who can make water-wise decisions. We provide teacher training and support the use of curriculum that has been developed by our regional water management district. Plus we provide in-classroom materials, live performances, and other programs that make the conservation information come to life.

We have a public education program that differs from what the bill calls for in that our program is not a mass media campaign, but is rather a very targeted program, it is intended specifically to generate customer participation in programs like the ones I've just mentioned.

Third, industry training is a critically important new effort. We have found that not only can industry be a great help with technology transfer to the affected parties, but it can also be a tremendous hindrance to effective technology transfer. We are working with the landscape and irrigation industries as well as the plumbing industry.

Another area of our program deals with utility management. These are fairly common measures. In Tampa we have gone one step beyond what is considered routine. We have a modified rate structure which establishes two blocks; each block is applied to every customer class. The level at which the second block, or the surcharge, is applied changes with customer class type.

Second, we conduct an annual water audit. A provision of the bill call for mandatory leak detection and repair. We feel that this is not cost-effective but may not be necessary in all communities, as is the case in Tampa.

Senator GRAHAM. You lost me there. You conduct an annual water ride?

Ms. NERO. Audit.

Senator GRAHAM. Audit?

Ms. NERO. Busch Gardens provides the ride; we provide the annual audit.

[Laughter.]

Ms. NERO. This is where we assess where our unaccounted for or lost water occurs within our system. There are lots of different ways that water can be lost. Leak detection is mentioned in the bill, as I said, and we suggest that perhaps the audit be required instead. In Tampa's case, we found that the greatest potential savings in a cost-effective manner could be achieved through meter testing, repair, and replacement, and that is our focus.

Regulations, another area of our program—we feel that these are critically important in high-growth areas. They build efficiency in up front as communities grow over time. We have three separate ordinances. Lawn watering is limited to certain days per week, the landscape code requires drought tolerant plants, and the plumbing code requires low consumption fixtures.

There are several reasons why our program has been effective, two of which are primary reasons that I will cite.

First has been the commitment from Mayor Sandy Freedman, as well as the elected officials in our community; and second, grants that have been made available from EPA, as well as regional water

management districts, have allowed us to implement programs where we might not otherwise have been able to afford to do so.

Senator CHAFEE. How about third, good management?

Ms. NERO. Good management is also important, as well, but I featured the two that I thought were most important.

Senator CHAFEE. We'll tell the Mayor you are doing a good job.

Ms. NERO. Thank you, sir.

Finally, I have a couple of brief suggestions on S. 1114.

The EPA has been assigned responsibility for coordinating the conservation features of the bill and are responsible for the clearinghouse. Technical assistance has been assigned to the Army Corps of Engineers. We feel that it would be most effective to combine these functions within one agency, which would provide both technical assistance and information sharing. We suggest that both those functions be housed within the EPA.

Second, conservation planning needs to be done in a broader context than is referenced. We suggest that the Integrated Resource Planning process or IRP, be embraced in this bill. This involves supply side and demand side planning of resource alternatives; it also looks at least-cost planning, and one of the unique features of that approach is that it involves an open and participatory process with the public.

Another point is that S. 1114 suggests that grants be made available to study conservation measures. Although study is very, important, especially with conservation, we find it would also be important to provide grants for implementation. This may be accomplished through grants, as suggested, but also we encourage looking at the existing State Revolving Loan Funds as a source of money, as well.

Finally I would like to say that I am pleased to have the opportunity to present Tampa's program. I believe that the bill provides needed direction to utilities, and it establishes a positive Federal role in motivating conservation.

Thank you again for the opportunity to be here.

Senator CHAFEE. I know comparisons are probably dangerous in this business, but do you have any statistics that would show, after all your efforts, the average consumption of water per day—however you want to do it—versus some other city of comparable size that hasn't done this?

Ms. NERO. We have found that our demands have reduced by approximately 12 percent, which is just under 12 million gallons of water a day.

Senator CHAFEE. Twelve percent from what?

Ms. NERO. From 76 million gallons a day to approximately 66 or 67 million gallons a day.

Senator GRAHAM. That's over what time period?

Ms. NERO. That's since 1989. It's over three and a half to four years.

Senator GRAHAM. So is the number of customers served approximately the same?

Ms. NERO. It has increased slightly. It has gone up from approximately 450,000 to 500,000. This is system-wide. We have a lot of industrial customers as well as commercial and business customers, as well.

Senator GRAHAM. So you're saying that since 1989, when you had 450,000 customers and you were using 76 million gallons a day, now—four years later, since you've implemented those water conservation initiatives—you have 50,000 more people, but roughly 10 to 12 million fewer gallons of water being consumed a day? Is that correct?

Ms. NERO. That's correct.

Senator GRAHAM. Is there any factor other than the water conservation effort that contributed to that reduction?

Ms. NERO. Well, at the same time we were experiencing a serious drought, a one-in-one-hundred-years drought event. The water management district at that time was imposing a series of mandates limiting lawn watering, eventually down to one day per week. We see that made a difference; however, at the same time demands also tended to be higher because of the drought and landscapes requiring more water. That also had some effect, but since Tampa now has a code requiring limited lawn watering, we feel that together helped us achieve our 12 percent reduction in demand.

Senator CHAFEE. I suppose that after all these efforts you reach a level that is pretty hard to get below, is that right?

Ms. NERO. That is correct. I would say the first 8 to 10 percent is the easiest to achieve; getting the last 5 to 10 percent will be significantly harder.

Senator CHAFEE. As you look across the country is there any model community that has done this and has a goal for you to shoot at?

Ms. NERO. I would like to think that Tampa is one of the leaders. Our goal was 15 percent reduction.

Senator CHAFEE. From the 1989 level?

Ms. NERO. Yes.

Other communities that are exemplary would be Phoenix, Arizona; Denver, Colorado; the City of Los Angeles. There's not a whole lot happening in the southeast part of the country.

Senator CHAFEE. Of course, you get a double winner. You get reduced water consumption and reduced demands upon your waste treatment facility.

Ms. NERO. That's correct.

Senator GRAHAM. You mentioned several linkages that you thought could be taken in order to encourage other communities to engage in this. What would you think about a proposal that would require a community to have a water conservation plan as a condition of eligibility for the various forms of Federal financial assistance? Some of this is being done in the utility areas, where a community or an investor-owned utility or REA has to demonstrate that they have taken conservation initiatives before they are allowed to expand their generating capacity.

Ms. NERO. I think the requirement for planning is definitely a good idea. In fact, the State of Florida is already doing this through our Water Management Districts.

I think we also need to be careful about what the plan should entail, what it covers, what it does. Equally important is not only what a utility suggests it will do, but on the backside, what it actu-

ally does. The monitoring and follow-up should also be a component of that.

Senator GRAHAM. Ms. Hecker, again, I want to thank you very much for the very significant report you have issued which, in the context of the first panel, will help us in our efforts to direct our data collection and monitoring more toward assisting in answering relevant questions.

Let me ask a question about the relationship between States and Federal agencies. It was stated several times during the first panel that most of the water data that we have is collected by non-Federal sources. What is your comment as to how effectively those non-Federal sources are being coordinated among themselves and with Federal agencies?

Ms. HECKER. The example I might use is the required annual report by States under section 305(b). Those reports form the basis of EPA's annual report on improvements in water quality. It is our view that EPA has had sufficient authority to establish guidelines and standards to get some uniformity in that reporting, but until very recently there was very, very little direction and guidance from EPA. As a result what you had is nearly 50 different ways of reporting, and a complete inability to use those reports to aggregate a national picture of the state of water quality and the trends in water quality.

EPA is moving forward. They are the natural body to establish the standards and guidelines, and it is ideal and appropriate—they are in fact coordinating through that Interagency Task Force. So we see progress in the right directions.

EPA, as you may know, is largely dependent on data from States and localities and other Federal agencies to make their decisions, almost across the board. Every decision requires data from other agencies. So it is absolutely essential that they work very closely and try to maximize the ability of that data to be integrated, to tell a coherent story, as well of course to have the most efficient collection of that data.

Senator GRAHAM. Senator Chafee?

Senator CHAFEE. Thank you, Mr. Chairman. Regrettably I have an appointment at 12:00.

Mr. Woodworth and Ms. Adelsman, your presentations were both very good. We are in heavy weather when we get into areas that you are involved in, the questions of water rights and all those things that we tend to treat very gingerly around here.

Let me ask you this, and I don't say this facetiously, Mr. Woodworth, are hydroelectric dams still being built?

Mr. WOODWORTH. Yes. The FERC does not license nearly as many new projects as they once did. I would have to consult on the numbers—

Senator CHAFEE. Again I'm not being facetious, but are any being built of any sizable scale? For instance, up my way many of the old dams that the original mills built that have been weakened, or even semi-destroyed, are being restored for little power generation, but this is small potatoes compared to what the west has. But the Bonneville Dam and Grand Coulee and so forth, they are really things of the past, aren't they?

Mr. WOODWORTH. The major projects, such as Grand Coulee or Hoover Dam or such as those, are finished, in terms of construction on the mainstream. But just for example, two years ago the Commission licensed a pump storage facility for 1,100 megawatts, I believe it was, over 1,000 megawatts. So there are large capacity projects that are still making use of the Nation's waters, but they are not of the same character as what you're referring to, the Hoover Dams and the Grand Coulee Dams.

Senator CHAFEE. I was thinking of Telico and things like that.

Mr. WOODWORTH. Not of that character, no. Around the country there are a number of smaller-scale facilities that are under construction or in the process of license, but they are not on the order of magnitude of Grand Coulee, no.

Senator CHAFEE. No.

Well, you and Ms. Adelsman aren't in total accord.

[Laughter.]

Mr. WOODWORTH. Just on this issue.

[Laughter.]

Senator CHAFEE. Did you come east together?

Mr. WOODWORTH. No, we didn't.

[Laughter.]

Mr. WOODWORTH. But we may go home together.

Senator GRAHAM. Senator Chafee, I would suggest you not continue that line of questioning.

[Laughter.]

Mr. WOODWORTH. Senator, I might also add that FERC's responsibilities go beyond new projects, and they also have a responsibility to license existing facilities, or to relicense those, and a number of those do propose expansion of their capacities to take advantage of the facilities that are already there, to make more use of what's there. So that's another area.

Senator CHAFEE. Ms. Hecker, as I got your testimony—and I'm scaling it way, way down—it seems to me that the point you were making is that the monitoring capabilities in EPA have been devoted to point source pollution—

Ms. HECKER. Yes, sir.

Senator CHAFEE. —and specific discharges.

Ms. HECKER. That's correct.

Senator CHAFEE. Whereas the problems current are arising from pollution stemming from millions of nonpoint sources, and that's not being measured. Is that what you're saying?

Ms. HECKER. That's largely correct, but even in terms of the data that has been collected on point sources, the data that has been built are largely repositories. For example, there is one major database that documents all the permits. There's another major database that houses all the ambient data, the statistics on the actual quality of the water. Those databases weren't built together. They weren't built for the decisionmaking of whether to continue a permit, to modify it; they're not linking—they're not readily able to link the decision, even in the point area, of what the implication of a given level of discharge really is for the quality of that water or watershed.

Senator CHAFEE. All right. Well, I appreciate the thoughts you've given us. Sometimes the information is alarming; I think in one of

the points you made, the data is collected and managed by over 165, I think you said, Federal and State entities. But some of those really must be local waterworks, just testing their water. It isn't as though we have 165 different entities racing around, monitoring water quality?

Ms. HECKER. Well, there are 10 Federal agencies, and most of the programs are under those agencies. For example, at USDA—or even today, here—we have the Geological Survey and the Fish and Wildlife Service, and the Secretary there is concerned about the fact that their own data isn't integrated and he is moving toward integrating it within that department.

So maybe 165 doesn't have to mean there is a complete absence of coordination, but it's the magnitude of relatively parochial efforts. That's really what it's about, is that the data is collected with a very narrow perspective to support a specific policy or program or decision, and that impairs its ability to be used by other parties.

Senator CHAFEE. OK, fine.

Ms. Nero, you certainly gave a good presentation and showed us what can be done when serious efforts are made on conservation, and I hope you get that final 5 percent. You are shooting for 15 percent below the 1989 levels?

Ms. NERO. That's correct.

Senator CHAFEE. Regardless of your growth in population?

Ms. NERO. That's right.

Senator CHAFEE. Well, that's a bold goal. I wish you success in it. It sounds like you're certainly doing everything you can.

Senator GRAHAM. She represents a bold city.

[Laughter.]

Senator CHAFEE. And a State that has had great leadership.

[Laughter.]

Senator CHAFEE. Let me just ask you this. When you do things like provide kits for showerheads, and the installation of the toilets that are 1.6 gallons as opposed to something around 3 gallons, and you put that in at a discount of some type, obviously this costs money. What is the money saving? Or is this just an appropriation? You don't get a cash saving anywhere, do you?

Ms. NERO. No, we wouldn't see a cash saving per se—

Senator CHAFEE. Except not having to build such a big waterworks?

Ms. NERO. Right. And that's precisely how the water savings are evaluated.

The funds to pay for the program come from a series of grants, as I mentioned, as well as revenues from the Water Department. We make sure that our rates create sufficient revenues to fund these types of programs, as well as future additional supplies, which we think will also be necessary.

The cost of water we have saved, was done so at a cost of less than \$0.20 per thousand gallons, whereas water is sold at a cost of approximately \$1.00 per thousand gallons. So the cost of conservation is significantly less.

Senator CHAFEE. Well, you can collect that from your water users, can't you?

Ms. NERO. That's right.

Senator CHAFEE. Tell me this. Is there much of a relationship between water charges and water consumption? Except if it gets very high? In other words, if you increase your rates, if you ask anybody, "What's your water bill," I think they wouldn't know. At least I don't know what mine is. It's not a big factor that one tosses and turns at night over.

But is there much of a relationship between what you charge and consumption?

Ms. NERO. We're finding that our residents are becoming more and more aware. As our rates were changed in 1990, it was based on average monthly usage by customer type, so they suddenly became aware of what their average usage was because anything beyond that they were subject to a substantial surcharge.

Also, the water bills can get considerably higher in Florida than other parts of the country due to lawn watering, and that is precisely where we are trying to get their attention, because that's the most flexible or discretionary use around the house or, in many cases, businesses. So they are becoming more and more aware of that.

Senator CHAFEE. Businesses consume a lot of lawn water?

Ms. NERO. Yes, in fact, they do. I don't know what percentage of their total demand it would be; it would depend on the business type. But, yes.

Senator CHAFEE. Well, thank you. These were good witnesses.

Senator GRAHAM. Thank you very much.

A wise man is leaving our presence here.

[Laughter.]

Senator GRAHAM. Ms. Nero, in Tampa, what are you doing in terms of recycling your wastewater as part of a conservation effort?

Ms. NERO. Tampa has a unique situation. We do not have active recycling programs right now, the reason being that Tampa has a central, far-removed wastewater treatment plant, unlike other communities, with frequent reference to St. Petersburg. We are looking at the possibility of direct reuse. We are looking at the—

Senator GRAHAM. Excuse me, direct what?

Ms. NERO. Reuse, where we would provide reclaimed water back into our water supply source upstream, or into injection wells which would be pumped from during the dry season.

We are also looking at cooperative arrangements with Hillsborough County, in locations where they have wastewater plants in close proximity to our developed areas.

Senator GRAHAM. Ms. Adelsman and Mr. Woodworth, and I apologize for having to miss part of Mr. Woodworth's testimony, but what I heard was that you started off with some positive comments about S. 1114 and how it dealt with the issue. Ms. Adelsman also had positive comments. I'm a little bit confused because you have a difference in policy, but from what I gather you both think that the language that is in S. 1114 is a good resolution.

Did I hear correctly?

Mr. WOODWORTH. You missed part of it.

[Laughter.]

Mr. WOODWORTH. Let me go first.

S. 1114 proposes a concept to broaden how waterways are viewed, how the health of waterways is viewed, and it proposes a broad-

ened context for reviewing those watersheds and ecosystems. That is a good thing, and that's what you heard.

The caution that we're raising here is that as that concept unfolds, that it not cause duplicative regulation, or worse yet, get into conflicting regulations in other areas of equally vital national interests. The one that we're here to speak about today from our perspective is the hydroelectric industry. It does have a very long and well-established history of Federal statutes dating back to 1920 in how it is regulated, and what the paradigm between Federal and State jurisdiction is.

The testimony that Ms. Adelman provided is suggesting not issues surrounding the health of the waterways, but around how the jurisdiction of that issue is to unfold, what the paradigm will be. I would suggest that she is suggesting a different paradigm than the one we've lived under for the last 70-plus years. That is the crux of the difference between the two perspectives that we share. The States' interests are legitimate; there's no question about that, and they do need to be accommodated. But our view would be that they need to be accommodated in the context of the existing paradigm, and that as this legislation unfolds it needs to be cognizant of that context, because if it is not it will lead to duplication and, worse yet, the conflicts that we're suggesting.

MS. ADELSMAN. Senator Graham, we are endorsing section 602. We feel that it is a clarification; it is not an addition to the authority that is already there.

The reason we feel it is a clarification is because it does clarify the scope of the 401 review and the scope of the standards and it gets to why we are setting standards and for what purpose. Clearly, section 602 defines the purposes a little more clearly than what we had before; however, we have to go back to the intent of the Clean Water Act. It is still the policy to restore and maintain both the chemical, physical, and biological integrity of the waters of the States. So the intent from the beginning of the Clean Water Act was to be beyond just the chemical.

I just want to make a very brief comment to illustrate why this is critical to us. When Mr. Woodworth was talking about hydro-power not being polluting, really, when we are dealing with hydro-power we are dealing with bypasses. Yes, the water is taken and is put through a turbine and is released downstream; in some cases in the State of Washington it is maybe 25 miles below where it has been taken. That reach of the river that has now been bypassed in many cases has no flow in it. That results in a major disruption of habitat. It's really difficult to say that that's not an environmental impact and is not part of the scope of the water quality certification, to mainly look at the dissolved oxygen and the temperature of the water when it is returned, and ignore the 25-mile reach of the river that is completely dried up and where the fish have disappeared.

So the State has taken an aggressive role in looking at the 401 scope, both at what's happening to the water when it is returned, but also what's happening to the water when it's being taken, what's happening to the reach of the river.

I should say when we have established instream flows, we have had tribes, Federal agencies, and several State agencies involved.

We look very carefully as to what the designated uses are. The State of Washington has not yet denied 401 certification to any hydropower, so this has really not been an issue. We actually license many projects; a lot of these projects are still operating, and they are still generating the power that is there. However, we have taken a very assertive role in restoring and maintaining flows in the bypasses, and we see that as part of the intent of the Clean Water Act.

I am really glad to see it even strengthened and made even more clear. I read a statement made by Senator Chafee that said it is good to have clean water, but if there are no fish there to come back to it, we haven't really accomplished what we wanted to accomplish.

So we don't see it as jurisdiction. We see it as the scope of the review and the scope of the 401, and this amendment actually really clarifies it.

Senator GRAHAM. Ladies and gentlemen, I appreciate very much your contribution to our hearing today and our understanding of your particular important aspects of the Clean Water Act. Thank you for the efforts you have made to travel such a distance to be with us today. Thank you.

[Whereupon, at 12:08 p.m., the subcommittee adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record follow:]

STATEMENT OF JAMES R. LYONS, ASSISTANT SECRETARY FOR NATURAL RESOURCES AND ENVIRONMENT, DEPARTMENT OF AGRICULTURE

MR. CHAIRMAN AND MEMBERS OF THE SUBCOMMITTEE: I am pleased to have this opportunity to discuss the views of the U.S. Department of Agriculture on the reauthorization of the Clean Water Act. Today I am accompanied by John Burt, Associate Deputy Chief, Soil Conservation Service, and William McCleese, Director of Watershed and Air Management, U.S. Forest Service.

Water quality is a crosscutting concern and has the potential of affecting agriculture and USDA programs more than the current Farm Bill. The quality of water from a watershed is influenced by the way we farm, harvest timber, graze cattle or confine livestock for efficient production. This is why USDA must be involved in the future Clean Water Act.

S. 1114 helps provide the support and program direction needed. The watershed approach is the most effective way nonpoint sources of pollution can be effectively managed. In my testimony today, I would like to discuss USDA experience in water quality, both on privately owned lands and on Federal lands.

Privately Owned Agricultural Land

First, USDA has numerous programs that have had, and are having, an impact on water quality on privately owned lands. Let me share with you a brief summary of one such program—the conservation compliance provision in both the 1985 Food Security Act (1985 Farm Bill) and the Food, Agriculture, Conservation and Trade Act of 1990 (1990 Farm Bill). Under conservation compliance, Congress linked, for the first time, an individual producer's performance on environmental issues to their eligibility for USDA farm program benefits.

To remain eligible for USDA farm program benefits, conservation compliance requires farmers to develop and carry out approved conservation plans on highly erodible cropland. Since the inception of conservation compliance, SCS has worked with farmers to develop more than 1.5 million conservation compliance plans. Each plan contains an implementation schedule and the agency uses a system of random spot checks to ensure compliance.

When fully implemented these plans will significantly reduce soil erosion on some 142 million acres on participating farms in the United States. To date, more than 50 percent of the plans are implemented. Full implementation is due, by December 31, 1994.

SCS estimates that fully implemented conservation compliance plans, combined with the grass and trees planted on the more than 35 million acres enrolled in the Conservation Reserve Program, will cut the soil erosion rate on highly erodible cropland in the United States by about 65 percent. In areas where sediment is the primary problem, conservation compliance will have the effect of improving water quality.

Without question, conservation compliance is one of the biggest challenges faced by USDA. It is also important to realize that conservation compliance is not just a big undertaking for USDA. For some farmers, the conservation practices called for under conservation compliance represent a major change in farming practices and farming culture. So too, will be any agricultural requirements contained in the Clean Water Act. And cultural changes do not happen overnight.

Second, let me quickly bring you up to date on the Department's water quality activities on privately owned agricultural land, the most extensive source of nonpoint pollution.

Our first major effort began with the Rural Clean Water Program in 1980 to implement nonpoint source abatement practices and to monitor changes in water quality. It involved 21 projects that were selected on a watershed basis.

USDA's National Conservation Program in 1988 established protection of water quality from agricultural pollution as a national priority. As a result, agencies began to redirect resources where possible to address water quality concerns. This resulted in:

- Increased research in such areas as developing predictive models, evaluating agricultural chemical transport, searching for plant species requiring less pesticides, and alternative pesticide use.
- Improved technical assistance capability to farmers and ranchers by adding water quality conservation practice standards in the county SCS Field Office Technical Guide.
- Increased technology transfer.
- Educational and information materials directed to farmers and ranchers to make them aware of the water quality concern and to provide guidance on how to correct obvious problems.
- Financial assistance, where possible, to help farmers and ranchers install cost-effective environmental practices and/or to try new methods of farming or ranching.

We're using all our available resources to help reduce the agricultural water quality concern. Today, we have about 135 water quality projects across the country. These projects deal with surface water, ground water or a combination of both. We have used the program authorities and resources of 15 programs to implement water quality planning and implementation.

USDA has also reached out to form partnerships with industry, farm organizations and with other agencies to help implement water quality improvements. Some of the progress includes:

- Trade publications featuring information for farmers and ranchers on agricultural water quality issues.
- Work among USDA, EPA, and agricultural organizations to develop a pollution prevention plan of action.
- Development of the first pesticide characteristics data base to make relative predictions of risk for pesticide movement to surface or ground water from different soils.
- Staff detailed to industry. The first detail was to the Southeast Poultry and Egg Association.

USDA is working closely with EPA on many water quality issues and projects related to agriculture. USDA and EPA have jointly funded SCS staff positions for all the EPA Regional and National offices, provided support to the National Estuary Program, and assisted EPA and the National Oceanic and Atmospheric Administration (NOAA) in developing technology-based management measures for the Coastal Zone Management Reauthorization Act Amendments. EPA has two persons detailed to USDA.

In addition, the U.S. Geological Survey and EPA are assisting USDA in monitoring some of our water quality projects and cooperating in several research projects.

As you can see, the agencies are cooperating on water quality efforts within the limits of their resources. The agricultural nonpoint source abatement effort requires a mix of expertise and program capability to implement effective water quality projects and conduct research.

We firmly believe the partnerships with agencies, agricultural communities, State governments and local people must be continued and improved. Federal and State governments cannot implement water quality improvements without the support of the local people and the agricultural community. This is the key reason for the watershed approach and it must be fully supported by all Federal and State agencies—especially USDA.

Our experience—which I've just touched on—has taught us some valuable lessons:

- First, patience. It takes time for water resources to respond to reduced nonpoint source loads.
- Second, rely on observable results. Monitoring of physical and chemical characteristics of water provides important information for determining impacts on water quality and on identified beneficial uses of water. In addition, monitoring of biological characteristics is important for understanding the impacts of nonpoint sources of pollution.
- Third, on-farm application is essential. When farmers were able to relate their farming activities to the water quality concern, they were willing participants to the solution.
- Fourth, always remember that a delivery system which can implement programs at the local level is absolutely vital.
- Fifth, our experience shows that solutions which come from the bottom up, rather than the top down, work best. Local solutions and local controls, with appropriate Federal and State backup, are preferable.

The farmer must make daily management decisions. To include water quality concerns in the decision making process, the person must know how those daily decisions affect water quality. The farmer's decision on the "back 40" will influence the water quality from the watershed. This will require USDA to reorient its educational and technical assistance to focus more on water quality.

The nonpoint source problem is enormous. Preliminarily, EPA estimates that it would cost \$8.8 billion over 20 years to control agricultural and silvicultural nonpoint sources on all lands. We have not yet estimated the needs for the more targeted approach we are supporting today, but the cost should be lower. It should be viewed just as an estimate. But if you add in mining, urban, roads and airborne sources, you begin to see the magnitude of the problem. In addition, the problem, once solved, doesn't stay solved. Land ownership and use changes, as does the weather. The desire of society for a quick fix of the nonpoint source issues must consider the difficulty in making major shifts in farming, mining, building roads and so forth. This is why the State and local governments must play a key role.

The watershed approach in S. 1114 is very sound and should effectively accomplish the objectives of the Clean Water Act without major public resistance. However, it will require someone with experience in watershed planning and resource management at the local level to facilitate the process and assist in implementation. The Soil Conservation Service and Forest Service can assist in providing this service at the local level in partnership with EPA and State governments.

In the continental U.S., there are well over 10,000 watershed units identified by the U.S. Geological Survey Hydrologic Unit Catalogue System that vary in size from 250,000 acres to 450,000 acres. These units are "nested" within 300 to 3,000 larger basins. Smaller watersheds are preferred because local people can better focus upon and understand their influence on smaller basins.

From our experience, we would recommend three ways to make the watershed concept work for water quality.

First, continue to involve USDA.

We have the field staff, the experience and the multiple disciplinary technical skills necessary to supplement efforts already in other agencies to implement the watershed approach. You'll need the energy of experienced people to serve as a catalyst to get the process started and you'll need technical and educational assistance to get the watershed plan implemented.

Second, make the program flexible.

This is especially important because:

- No two watersheds are alike. Some may need only very low intensity evaluations and plans of action because they have obvious or very few problems.
- Watershed management is a new concept for Clean Water Act implementation. Different approaches will be needed. The States and Federal government need flexibility in implementation and funding. We must rely on the States, with

Federal government assistance and oversight, to develop watershed programs tailored to their State resource conditions and local citizen involvement.

Third, involve local people and institutions.

The people involved in the problem need to be involved in the solution. Without general support, a water quality program is doomed for failure. To illustrate, how do you know how much fertilizer or pesticide a farmer is applying? How can you police it? River Basin authorities, State governments, conservation districts, county governments, or other local organizations should all play a role. Federal government agencies should provide their skills and resources to support the process.

Federal Forest Land

Now I will turn my attention to the National Forest System. The Forest Service is responsible for managing for multiple-use purposes the 191-million acres of forest and range land that comprise the National Forest System. The challenge for the Forest Service is to manage with an ecosystem perspective for all uses, while ensuring the protection of the basic soil, water and air resources that are crucial to sound stewardship of the land.

The Forest Service is actively involved in research, development and implementation of management practices designed for the control of nonpoint sources and the protection of forested watersheds. This leadership extends back to the formation of the National Forests. National Forests were originally withdrawn from the public domain for the purpose of securing favorable conditions of water flow and to ensure a continuous supply of timber. It is not possible to maintain favorable conditions of water flow without protecting watershed condition and water quality. Based on this experience and knowledge, the Forest Service has developed a watershed management strategy for protection of nonpoint sources based on two basic components: prevention and rehabilitation.

Our prevention program is designed to prevent the creation of problems from ongoing and future resource management activities. Land management prescriptions are designed to protect water quality and associated beneficial uses. Monitoring is necessary to ensure that practices are implemented as designed and are effective in providing the necessary protection. Mitigation is used when monitoring shows that unforeseen problems have been created. Finally, land management prescription design criteria are adjusted, where appropriate, to prevent problems with future activities. This iterative process is designed to allow for land use while protecting water quality and water dependent resources in the long term. Land management prescriptions are currently being designed and adapted with the best science available.

Our rehabilitation program is designed to restore those lands that have been damaged by past activities. Lands needing improvement have been identified and inventoried. These lands will be restored to reduce and eventually eliminate contributions to the nonpoint source problem.

Forest Service policy is to comply with all State requirements for protection of water quality in the same manner and to the same extent as a nongovernmental entity. In most States, we have developed and implemented working agreements. Under these agreements, the Forest Service is responsible for implementing State nonpoint source water quality programs on the National Forests. Through review of proposed Forest Service programs and monitoring of activities, the States are assured that Forest Service programs meet State nonpoint source water quality requirements.

Comments on S. 1114

I will now offer comments specific to S. 1114. We are delighted to see that S. 1114 is taking the watershed approach to help implement water quality improvement programs—an approach that is consistent with our philosophy of managing ecosystems on a watershed by watershed basis.

We have found this to be the most effective way to control nonpoint source pollution. It has the flexibility needed to solve a very dynamic and complex problem. It allows for the uniqueness of each watershed. It allows for a multi-disciplinary approach. It virtually demands local involvement. It requires interagency cooperation and shared resources. It depends upon the implementation of cost-effective, practical solutions.

EPA, in consultation with USDA and others, should provide watershed program requirements for the State to follow. The State would be responsible for developing a watershed program that meets the State land and water resource needs and meets EPA requirements. EPA would approve the State watershed program and provide

implementation oversight and assistance. USDA needs to be involved throughout the entire process—from the State level through EPA approval.

As a minimum, a State watershed plan should list the targeted watersheds, identify water quality concerns in the watersheds, specify a schedule for developing the plan, and require coordination with appropriate Federal agencies, including land management agencies, and identify Federal and state assistance available through existing programs.

We have, however, identified several questions and concerns about S. 1114. Some of our concerns are directed to those areas where we believe that change in the current Act could interfere with effective programs for controlling nonpoint sources of pollution. USDA's experience in nonpoint source control, gained from working cooperatively with EPA and State agencies on agricultural land, and research and watershed management on forest land, gives us confidence that our assessment and recommendations are sound.

USDA supports the Farm Bill incentive programs now being used to address nonpoint source problems. USDA and EPA have been operating with the understanding that, as watersheds are identified for treatment, critical areas and sources will be identified, land management prescriptions identified and a schedule set for implementation. The time frame for implementation will vary with size and complexity of the treatment. Water quality standards should be used to identify problem areas and to measure the effectiveness of land management prescriptions.

At the end of the implementation period, if water quality standards are not met, an evaluation should be made to determine (1) if the level of treatment applied was adequate but the system has not been given enough time to respond; (2) if additional treatment is needed; or (3) if existing water quality standards are inappropriate consistent with provisions of section 303 of the Clean Water Act. If it is determined that additional treatment is needed, the process would be repeated.

Pollutants are stored in the soil profile and sediments, the water and in aquatic biota. Adequate time must be allowed for these existing materials to be removed before full recovery can be expected.

Implementation of management measures in impaired and threatened areas could be based on site specific plans as an alternative to National management measures. Conservation or management measures should be designed to specifically address the identified water quality problems.

Section 304(d) entitled Federal Program Coordination is opposed by the Department. The provisions of the Food Security Act of 1985 and the Food, Agriculture, Conservation, and Trade Act of 1990 already have provisions to establish priority to water quality problems identified in State 319 management plans. The effective management of these programs for their intended purpose will be jeopardized if the Secretary is required to restrict their availability.

These programs are administered to be responsive to the natural resource and environmental concerns of the nation and go beyond water quality alone to deal with issues such as wetland restoration, endangered species habitat protection and restoration and aquifer and groundwater protection. USDA needs flexibility, not more restrictive legislation.

In general, USDA is not opposed to a requirement that Federal lands be managed in a manner that is consistent with that required on private lands. In fact, the Forest Service does just that. USDA continues to be committed to the use of best management practices as required in the current law and agrees that it should comply with management measures in watersheds to the same extent as non-Federal entities in those watersheds. It does not, however, believe that it is necessary to regulate this activity. While we do not oppose this requirement, we believe the existing Executive Orders are adequate if carried out by all Federal agencies.

As we have indicated, USDA supports the emphasis on a watershed management approach to nonpoint source control contained in S. 1114. This is largely consistent with the direction already taken by the Forest Service and the Soil Conservation Service in implementing new ecosystem strategies for natural resource management. Control of nonpoint sources can be best achieved if approached in a holistic manner through watershed management. An analysis of watershed conditions, and an understanding of the relationships of land management activities on the water resource, allows a meaningful way to allocate and distribute land management activities in an efficient and effective manner.

While S. 1114 contains direction for the States to designate watershed management units, and to determine the entity responsible for developing and implementing a watershed plan, there is no reference to the role of Federal agencies in managing public lands. It is not clear how State watershed management programs would affect land management plans developed by the Forest Service for management of

the National Forests. There could be a conflict between Watershed Management Plans developed by the States for water quality protection and Forest Plans developed by the Forest Service for multiple-use management. We recommend amendments to clarify the respective roles of both State and Federal agencies which focus on a coordinated program that will satisfy both the Federal and State purposes.

Section 202(c) of S. 1114 would add language establishing antidegradation policy. This section identifies all waters in the "national forest" as Outstanding National Resource Waters. This designation, coupled with current EPA regulation for such waters, may interfere with multiple use management of the National Forests. The basic concept is that such waters cannot be degraded, even where water quality is higher than that necessary for protection of the identified beneficial use. While we agree that the waters originating on National Forests are important, we believe that it will be difficult, and in some cases impossible, to meet our responsibilities under other legislative mandates and meet these new requirements. This includes responsibilities under the Multiple-Use Sustained Yield Act of 1960 and the National Forest Management Act of 1976, and other authorities that direct the USDA to manage the National Forests for multiple use. We recommend the term "national forest" be deleted.

Section 304(a) of S. 1114 would add language identifying the "harvesting of timber or the construction of a forest road" as a "new source." Those lands that have been identified in the Forest Planning process to be suitable for the production of timber undergo many activities over a rotation period. This includes planting, stand improvement and harvest. While it is true that a long time elapses between harvests, these lands are often undergoing extensive management during that period. We have concerns about the definition of "new source" in S. 1114, and we will be working with EPA on a recommended definition for "new source" as it relates to forestry and will jointly provide that to the Committee in the near future.

Section 304(d) "specifies that any license, permit, contract, special use permit, lease, agreement, claim, or related operational authority between a Federal agency and any person authorizing activities on Federal lands in effect on the day before the date specified in subparagraph (B)(ii) *may remain in effect for the term of the authority or a period of 5 years (beginning on the date specified in subparagraph (B)(ii) whichever is less.*" (Emphasis added.) This section would require that authorizations issued by the Forest Service, and currently in effect, to use and occupy National Forest System lands for private and commercial activities would be terminated within a period of five years from passage of this bill which could be before their scheduled expiration date. These authorizations, which may take the form of contracts, permits, term permits, easements, and leases, are issued under several statutory authorities, including the Term Permit Act of 1915, the Federal Land Policy and Management Act of 1976, the National Forest Ski Permit of 1986, the Mineral Leasing Act of 1920, the National Forest Roads and Trails Act of 1964, and the National Forest Management Act of 1976. Many of these existing authorizations are for longer than five years, such as the 40 year ski area permits, certain 30 year permits and the 50 year timber sale contracts in Alaska.

The USDA has approximately 72,000 of these use authorizations in effect. Uses of National Forest System lands typically authorized by these authorities include electric, telephone, oil and gas transmission and distribution line rights-of-way, ski areas, resorts, marinas, water transmission facilities, interstate, State, and county highways.

The impacts of these statutorily-directed terminations would be far reaching. The costs to the public fisc for terminations, prior to the currently agreed upon expiration dates under the language of the agreements, and takings law could involve many millions of dollars. In addition, all such terminated uses could be subject to reconsideration at the same time. The administrative burden of this review could exceed the agency's capacity to analyze and process in a timely manner, as well as place a significant paperwork burden on the holders. Furthermore, the extensive capital investment required to construct and operate these facilities requires a certainty of period of use so that the investment may be financed and amortized.

The USDA believes that its processes currently in effect properly safeguard water quality and accomplish the purpose of S. 1114. The USDA, through the Forest Service, issues all authorizations with language requiring compliance with all applicable water quality standards established pursuant to Federal or State law. This also applies to requirements imposed by Federal legislation subsequent to the date of the authorization. The USDA strongly believes that this requirement is adequate to accomplish the purpose of the proposed legislation. We recommend that section 304(d) be deleted.

The Department stands ready to work with the committee to develop language to address our concerns with S. 1114.

I appreciate the opportunity to testify today and will be happy to respond to your questions.

TESTIMONY OF DOUGLAS K. HALL, ASSISTANT SECRETARY FOR OCEANS
AND ATMOSPHERE, U.S. DEPARTMENT OF COMMERCE

Good morning, Mr. Chairman and members of the Subcommittee. I am delighted by the opportunity to come before you and discuss the role of the National Oceanic and Atmospheric Administration (NOAA) in furthering, and benefiting from, the new approaches for managing our environment proposed in the Water Pollution Prevention and Control Act of 1993 (S. 1114). I commend Senators Baucus and Chafee for introducing a reauthorization package to the Clean Water Act that provides a major advance in our capabilities to manage environmental resources.

To carry out its Federal trustee responsibilities for coastal, marine, and anadromous fishery resources, NOAA has long championed an approach to environmental management that recognizes the integrity of ecosystems as the logical focus for resource management decisions. New authorities for nonpoint source pollution control under the joint stewardship of NOAA and the Environmental Protection Agency (EPA) for coastal zone management have sharpened our interest in the watershed/ecosystem focus. The Baucus/Chafee legislation provides a new framework of national policy within the Clean Water Act that will further progress toward restoring the quality of our Nation's waters. This framework is consistent with NOAA's goals and management responsibilities and will enable better use of NOAA scientific capabilities and technical expertise to meet the needs of resource managers.

Over the past two decades, the Clean Water Act has come a long way in controlling chemical water pollution, one part of the Clean Water Act's overall goal "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." And now we can turn to the last element of the original mandate of the Clean Water Act—to protect the biological integrity of our stream, lake, river, and coastal ecosystems.

NOAA strongly endorses the restatement of the goals and strategies of the Clean Water Act to include protecting and restoring ecosystem health. This shift in perspective from piecemeal and fragmented to comprehensive and integrated will enable us to focus on systematic causes of decline rather than individual impacts. The strategy, which directs management, planning, research, and monitoring efforts on entire watersheds, is particularly critical for the coastal and marine ecosystems under NOAA's stewardship.

I would like to discuss four major themes in the proposed legislation that underpin NOAA's strategic directions for protecting the health of coastal ecosystems. These include the watershed management approach, regional partnerships, stronger controls on nonpoint source pollution, and research and monitoring.

Watershed Management

The watershed management approach in the proposed legislation gives us a first step toward full restoration and protection of living resources, and it should be considered the umbrella under which most other policies of the Clean Water Act are carried out. Of course, in order to be effective, watershed management must go beyond planning. The approach must incorporate adequate means by which to ensure the full implementation of watershed plans.

NOAA strongly supports the addition of a new section to the Clean Water Act for the purpose of encouraging comprehensive watershed management. As the agency responsible for the longterm protection and management of this Nation's coastal and marine resources, NOAA is acutely aware of the effects of activities resulting from poor watershed planning and management, sometimes occurring tens or hundreds of miles inland, on the coastal and nearshore resources. We believe that the greatest long-term threat to the viability of commercial and recreational fisheries, the protection of marine mammals and marine endangered species, and the preservation of our coastal zone, National Marine Sanctuaries and National Estuarine Research Reserves is the continuing loss and degradation of marine, estuarine, and aquatic habitats. These declines are a result of physical alterations, nutrient and toxicant loadings, changes in freshwater flows, siltation, and other human-based environmental problems. More than half of the Nation's original acreage of coastal wetland marshes have disappeared and dramatic declines in seagrass beds have occurred. Louisiana alone loses an estimated 35,200 acres of coastal wetland habitat

each year. Because many of our environmental problems stem from the cumulative effects of development, and other incompatible or poorly planned human activities, a new strategy—based on goals to protect and restore living resources, and which includes full upstream watershed management as well as downstream ecosystem management, planning, research, and monitoring—is needed to turn the tide on coastal degradation.

The concept of watershed management and planning is not new. It is being practiced on a number of levels by many state and Federal agencies. The Administration has formally embraced the development and implementation of watershed planning in the newly released Northwest Timber Plan, geared toward protecting forest and fishery habitats along with the economic needs of the region. While NOAA has been involved in watershed issues on the West Coast for some time through the evaluation of endangered species listings for salmon stocks, this reactive approach is not the best method to address the broader problems of which salmon declines are only a symptom. The reauthorization of the Clean Water Act allows for the establishment of national strategies and specific priorities to undertake comprehensive watershed management in a systematic manner and deal with environmental problems before they become environmental crises.

In conjunction with several existing programs and authorities NOAA has been working to incorporate the principles of watershed protection in the management of marine resources. Within the National Marine Fisheries Service the new Office of Habitat Protection has worked with the Federal/state Chesapeake Bay Program partnership to remove blockages to anadromous fish passage. Electric power utilities in the Susquehanna River watershed have pledged to install by 2000 fish passage facilities at the three remaining dams blocking American shad spawning runs. As we restore spawning runs to formerly pristine rivers, it becomes even more essential to restore the water quality in these areas to support long lost fish populations. Habitat restoration and water quality protection go hand in hand, and watersheds provide the most effective framework for combined planning and implementation efforts.

In addition, twenty-nine states and territories have coastal zone management plans under the National Coastal Zone Management Program which NOAA directs. A number of these states, using grant funds from NOAA, have developed and implemented different versions of watershed management (such as watershed-based local coastal programs and special area management plans) within the context of their state coastal zone programs. The coastal nonpoint programs (discussed later in this testimony) are currently being developed by states and will also be based on coastal watersheds. The goal of a national commitment to watershed planning, with appropriate incentives, as called for in the legislation will provide support to the watershed concept within state coastal zone management programs.

Issues that should be addressed in the development of watershed programs include nonpoint source pollution, cumulative impacts of point discharges, enhanced wetland protection over and above that provided by the Section 404 program, and endangered species. We appreciate the Committee's efforts to provide some policy direction in S. 1114 in order to assist in ensuring comprehensive programs although we believe the specifics should be developed through guidance issued by EPA in consultation with the relevant Federal agencies and resource programs.

Regional Partnerships

The Clean Water Act has fostered many regional programs that bear directly upon NOAA's trust and stewardship responsibilities for fishery habitat and coastal zone management. NOAA participates in Federal/state partnerships coordinated by EPA, in particular the 21 National Estuary Programs and the three Great Waters Programs (Chesapeake Bay, Gulf of Mexico, and Great Lakes).

To restore and protect these coastal waters, all environmental agencies at Federal, state, and local levels must work together and develop restoration and protection goals that are fine-tuned to meet regional needs and concerns. This will depend on each agency using its particular strengths, skills, authorities and institutional arrangements with other stakeholders. NOAA's focus is in its coastal zone, habitat, sanctuary and reserve, fishery management, research, and monitoring responsibilities. The advantages of combining expertise are demonstrated by NOAA and EPA's joint administration of section 6217 of the Coastal Zone Act Reauthorization Amendments. In addition, the partnership approach in the National Estuary Programs and Great Waters Programs builds on each agency's strengths to create truly comprehensive action plans.

NOAA is committed to participating in these ecosystem-based restoration and protection programs. They go well beyond traditional water quality management pro-

grams in that living resources are the ultimate measures of success. NOAA's National Marine Fisheries Service recently opened a Chesapeake Bay Office in Annapolis, located adjacent to EPA's Chesapeake Bay Program Office, to tighten coordination of efforts on the cleanup and restoration of this estuary. Since 1985, our Chesapeake focus has been on strengthening the Federal/state implementation plans on wetlands, submerged aquatic vegetation, fish passage improvement, oyster reef restoration, and fishery management. We have funded major research efforts to design improved fishery surveys, to understand the ecosystem processes and effects related to low dissolved oxygen levels, to study ecological effects of low levels of toxicants, and to monitor algal blooms using aircraft remote sensing. Our partnership with EPA in this program is our model for interacting in other large and small estuary programs.

NOAA's protected area programs—the National Marine Sanctuary Program and National Estuarine Research Reserve Program—complement watershed planning and implementation efforts proposed in S. 1114, and we look forward to continuing our coordination with EPA and other Federal, state and local agencies and the public. In Florida, for example, NOAA is developing an overall ecosystem management plan for the Florida Keys National Marine Sanctuary in cooperation with the State of Florida, EPA, other government agencies, commercial fishermen, environmentalists, recreational user groups, and the public. Both EPA and NOAA are involved in a newly invigorated cooperative effort to integrate the protection of the sanctuary with the larger South Florida ecosystem of which it is a part, including the Everglades.

NOAA is also participating with EPA and the National Science Foundation in the Waquoit Bay, Massachusetts, Land Margin Ecosystem Project. It is examining land uses and nutrient loadings in order to characterize the physical, chemical, and biological processes occurring in the bay and surrounding subwatersheds. Waquoit Bay has been designated by NOAA as a National Estuarine Research Reserve. The scientific data from this project is used by the Reserve staff to develop and disseminate educational information for coastal decision makers, educators, and the general public.

These are the types of regionally based cooperative efforts organized around a specific watershed that will be at the forefront of environmental issues in this country. These initiatives set an appropriate framework for the integrated protection of these and other outstanding natural resource areas and should be an extension of the watershed management approach proposed in S. 1114.

Nonpoint Pollution Control

NOAA believes that tackling the problems of nonpoint source pollution provides an opportunity to have a profound impact on this Nation's coastal environment in the next century. We strongly support strengthening the existing section 319 programs. There has been much work to date on coastal nonpoint programs under section 6217 of the Coastal Zone Act Reauthorization Amendments of 1990 (CZARA). While the Clean Water Act amendments do not need to duplicate CZARA, we believe it is very important that amendments to section 319 of the Clean Water Act be compatible with these programs. Consistency between the state coastal nonpoint programs and the state section 319 programs will undoubtedly bolster both efforts, and will help to address the concerns of the coastal states regarding the contribution of activities in inland states to coastal water impairments. We support many of the approaches found in S. 1114 to increase national attention to the control of nonpoint sources of pollution, because we believe they will support efforts already underway with the coastal states under section 6217 of CZARA.

Passage of CZARA expanded NOAA's role in nonpoint source pollution prevention and control, directing a new effort by the coastal states and territories. The new coastal nonpoint program is administered jointly by NOAA and EPA. Section 6217 requires the 29 states and territories with federally approved coastal management programs under of the Coastal Zone Management Act to develop and implement Coastal Nonpoint Pollution Control Programs. The state coastal nonpoint programs are required to implement best available management measures in conformity with guidance developed by EPA, in consultation with other Federal agencies.

We are now six months into the 30-month statutory time frame for the states to develop and submit their coastal nonpoint programs. We are finding that there is general support for the goals of section 6217, and that, in many cases, the statute complements what many of the states have been trying to do to protect their coastal waters. However, the states also have several concerns which include 1) limited resources available to accomplish the scope and timing of the requirements, 2) achieving water quality standards given the contribution of upstream, out-of-state sources,

and 3) the challenge of developing and implementing controls on sources not traditionally subject to such management.

Despite these concerns, coastal states are making an effort to develop coastal nonpoint programs to meet the Federal requirements. States are also reviewing their existing authorities to assess how they could be used or revised to address nonpoint pollution management. Most states are also undertaking new education efforts to make the public aware of the nonpoint source pollution problem and to generate support for future state efforts.

We also consider the improved dialogue and coordination between coastal management and water quality agencies at the state level, as well as at the Federal level between NOAA and EPA, to be one of the early successes of the program. We would like to see this coordination continue and be strengthened through amendments to section 319. We have additional comments on certain specific aspects of the bill, related to our CZARA responsibilities, that we intend to submit for the record, in response to your July 14, 1993, hearing on nonpoint source pollution.

Research and Monitoring

NOAA believes that any new legislation outlining management from watershed and ecosystem perspectives must include appropriate monitoring and research. To design ecosystem protection goals and objectives effectively, we must be able to define, detect, and understand the meaning of ecosystem health criteria. These challenges are as important and equally as daunting as the challenges to management. Without them, we will not be able to identify real risks, track progress, or adapt management strategies along the way. Each of these is an essential ingredient to economically sound and environmentally effective management.

Several agencies currently conduct research and monitoring activities mandated by statutes other than the Clean Water Act. NOAA, for example, currently invests about \$30-\$40 million annually in water quality monitoring and research as part of its mandate to protect and better understand coastal, estuarine, and Great Lakes ecosystems. Clean Water Act goals can be met more quickly and efficiently by acknowledging these existing programs and ensuring that all related monitoring and research data, information, and expertise from all Federal agencies are coordinated and used where appropriate.

There are many opportunities for NOAA's research capabilities to support the broadened goals of the Clean Water Act, with particular emphasis on understanding and protecting coastal ecosystem health. In response to the clear necessity to understand the impact of pollution on functioning ecosystems, NOAA conducts extensive research regarding aquatic ecosystem structures, functions, and impairments. Specific NOAA research projects range from basic research on aquatic ecosystem structure to solution-oriented investigations aimed at resolving specific problems. NOAA and its academic partners are able to conduct interdisciplinary research programs in all aspects of environmental quality and ecosystem health, including the influences of atmospheric deposition and land use on the integrity of aquatic ecosystems, the response of biological organisms to impaired waters, and the effects of pollutants on whole ecosystems.

In addition, NOAA is conducting research to develop new and more accurate measurements, and techniques such as bioindicators. NOAA is also developing and applying new capabilities, such as the use of Landsat remote sensing data to monitor and detect changes in coastal watershed land-cover and habitats and the application of ocean color remote sensing data to observe water quality-related characteristics such as turbidity and eutrophication. These capabilities could be an integral component of an ecosystem monitoring approach and continued research in these areas is essential.

Our existing network of research and monitoring activities and fishery habitat assessment projects could make a significant contribution to the evaluation and protection of aquatic ecosystems under the Clean Water Act. Efforts to improve water quality criteria to protect ecosystem health could benefit from NOAA's extensive background with ecosystem characterization and evaluation. This is also an opportunity for many elements of NOAA to share their expertise and facilities with regionally oriented programs, including the National Estuary Program and the Chesapeake Bay, Great Lakes and Gulf of Mexico programs.

NOAA's strategy of improving our basic understanding of ecological processes, with a focus on developing the information needed to support decision making, has been employed and refined over a number of years in key locations, including Puget Sound, northern Gulf of Mexico, Chesapeake Bay, New York Bight, Narragansett Bay, and the Great Lakes. For example, the on-going Great Lakes ecosystem program focuses on a range of issues including toxic substances, nutrient over enrich-

ment, habitat modification, water quantity/quality, and physical processes/hazards. This program is interdisciplinary, uses modeling techniques to integrate research results, and is effectively coordinated with programs of other Federal, state, regional, and Canadian agencies.

NOAA's existing capabilities for monitoring the marine environment also offer a considerable opportunity for supporting Clean Water Act goals. NOAA conducts the National Status and Trends Program, a national monitoring program that evaluates the state of contamination of our coastal waters by toxic substances released through human activities and assesses the trends in these conditions. This program has collected data since 1984, long enough to detect national and regional trends in the levels of certain contaminants. The recent National Coastal Monitoring Act of 1992, which mandates the development of a national Federal-state monitoring program to assess the status of coastal ecosystems of the United States, has expanded NOAA's historical responsibilities. NOAA and EPA are currently developing a joint strategy for carrying out the responsibilities mandated by the Act and are working to develop an initial report on the status of coastal systems to be completed this year.

Monitoring and research needs and programs mandated by the Clean Water Act should be coordinated with those of NOAA and other agencies to create a more efficient Federal effort to meet the goals of the legislation. NOAA recommends that there should be an interagency mechanism for coordinating the agencies water monitoring programs. However, we believe that the Clean Water Act should not include a monitoring council that would duplicate existing mechanisms. Rather, we recommend that the Clean Water Act defer to an existing mechanism. At present, NOAA is participating with EPA and other agencies in the Intergovernmental Task Force on Water Quality Monitoring (ITFM). ITFM has proposed an overall Federal strategy for conducting a national water quality monitoring program and a permanent structure for coordinating its implementation. We recommend that the Clean Water Act recognize this or another existing body as the forum to develop a monitoring strategy and design and to establish quality assurance procedures for data and information.

Conclusion

In conclusion, over all, we support the concepts and principles contained in S. 1114. In particular, we strongly support the movement in the Clean Water Act to use biological resources and criteria as environmental indicators for decision making. The holistic approach to management of watersheds will also greatly assist in our efforts to protect fish and wildlife resources from impacts stemming from development in watersheds which drain into coastal waters. Research and monitoring at the ecosystem level are critical to adopting a holistic approach to ecosystem protection and restoration. NOAA offers unique capabilities needed to deal successfully at the ecosystem level in marine, coastal, and Great Lakes environments. Activities of NOAA and other Federal agencies related to the Clean Water Act should be acknowledged in the Act to ensure use of this expertise and information in meeting Clean Water Act goals.

While each of these areas could be further strengthened, such recommendations are more suited for a follow-up legislative report, which we will gladly provide.

Mr. Chairman, this concludes my testimony. I would be pleased to respond to your questions or those of other members of the Subcommittee.

TESTIMONY OF DALLAS PECK, DIRECTOR, U.S. GEOLOGICAL SURVEY, U.S. DEPARTMENT OF INTERIOR

I. Introduction

Mr. Chairman and members Of the Subcommittee, it is a privilege for me to appear before you today as you consider the issues of watershed management and monitoring. My testimony will emphasize those aspects of the U.S. Geological Surveys (USGS) programs that most directly pertain to the objectives of coordination, monitoring and assessment.

The objectives of the Clean Water Act, as well as an evaluation of how well we are meeting those objectives, can only be achieved with the support of good science. Good science, however, requires reliable information to identify and quantify the causes and effects and trends of existing and emerging water-quality problems, and there is general agreement that the information obtainable from existing monitoring efforts still provide an incomplete and fragmented picture of national water

quality and its trends in improving water quality and reducing public health and environmental risks.

These monitoring efforts have certainly contributed to our understanding of water-quality conditions in the country. However, they have not provided the kinds of coordinated, consistent and comparable information necessary to answer the types of regional and national policy and management questions that are facing the Nation. Some of the difficulties in using these data to describe the Nation's water-quality conditions include:

1. Field sampling and laboratory analytical procedures commonly differ among agencies and with time;
2. Water-quality sampling sites commonly are clustered around known or suspected areas of contamination-thus assessments based largely on these data have a potential for substantial bias;
3. Few sites have been sampled long enough and on a consistent enough basis to assess changes in water-quality conditions over time; and
4. Historically, there is a lack of data for potentially toxic trace elements, pesticides, and other organic compounds that are of recent concern.
5. Historically, assessment of trends and changes in public health and environmental risks have not received sufficient attention.

Even so, we believe that improved Federal, State, and local monitoring efforts, together with the new, more broadly-based national assessment programs of the USGS and other Federal agencies, will provide the support needed to achieve the objectives of the Clean Water Act as well as other resource management and environmental statutes, and to evaluate success in meeting those objectives.

II. USGS Mission and Capabilities

Let me now describe briefly some activities of the USGS that support water-quality programs, including those authorized in the Clean Water Act-but first, some organizational background:

Our mission related to water resources is to develop and provide hydrologic information to a wide range of organizations in both the private and public sectors. We assist all levels of government in carrying out a broad spectrum of activities including basic data collection and assessment of the quantity and quality of surface water and ground water. Our programs are carried out in each of the 50 States, Puerto Rico, and the Territories. We maintain close technical ties with State and local governments, and participate currently in jointly-funded water resource investigations involving more than 1,000 formal written agreements that are renegotiated annually. We also provide technical support for about 40 Federal agencies that transfer funds to us to accomplish tasks in support of their respective missions.

III. Coordination of Water-Quality Monitoring

Turning now to the matter of coordinating Federal, State, and local monitoring activities:

Water-data collection responsibilities are dispersed among all levels of government and the private sector. Cooperation and coordination among data collection organizations is essential if this pool of usable information is to be increased. Inter-agency agreements must be reached to establish comparable methods of data collection and laboratory analyses, techniques for quality assurance and quality control, and procedures for exchanging information. The successful establishment of such cooperation promises to greatly improve the availability of reliable and valid monitoring information and water quality and ecological assessments.

The Office of Management and Budget (OMB), recognizing the need to improve the coordination of Federal water information programs and to develop effective working relationships with State and local agencies, Indian Tribes, and the private sector, established the Water Information Coordination Program (WICP) in December 1991 (OMB Memorandum No. M-92-01). The U.S. Geological Survey, through the Department of the Interior, is responsible for implementing this program.

In January 1992, the WICP established the Interagency Task Force on Monitoring Water Quality (ITFM) to evaluate water-quality monitoring activities in the U.S. and recommend improvements. This study was mandated in the OMB memorandum. We are working closely on the ITFM with EPA which chairs the group. The ITFM includes both State and Federal members. A report to OMB of the ITFM's first year's activities outlines a proposal to carry out a national strategy to enhance water-quality activities and to support better management decisions.

Part of the strategy proposes to initiate a Methods and Data Comparability Council to provide guidance on the development of data collection methods and protocols. Representatives of Federal, State, and local agencies, Indian Tribes, and the private

sector are involved with ITFM at the regional and State levels throughout the country to discuss the proposed strategy and to identify the next steps to improving the field coordination of monitoring activities.

The USGS and the EPA are working closely together to support the ITFM. The degree of cooperation we are receiving from other Federal agencies such as the Departments of Agriculture and Defense, NOAA, and State agencies is outstanding. It is gratifying that other agencies afford this coordination a high priority, and I am confident that the Task Force and resulting institutional mechanisms being established by executive action will improve significantly the effectiveness of our monitoring and assessment programs across the board.

IV. USGS Water-Quality Monitoring and Assessment Programs

The USGS has been actively engaged in assessing and monitoring the Nation's water resources for many years. For example, our stream-gaging network began operation over 100 years ago, and ground-water, surface-water, and precipitation data are collected now on a routine basis at over 45,000 sites across the Nation.

We become involved in compliance monitoring as part of our technical assistance activities with Federal regulatory agencies such as the EPA, Bureau of Reclamation, and Corps of Engineers; and in some of our cooperatively-funded programs with State and local agencies. We are not, ourselves, regulators, so our involvement in compliance monitoring is usually limited to network design, the determination of sampling strategies and methods, the choice of laboratory methods and standards, and, occasionally, the construction and operation of gages and observation wells for others.

By contrast, our own status and trends monitoring activity is continuous, comprehensive, generally regional in scale, and oriented toward assessing the resource itself. The purposes of status and trends monitoring are: (1) to understand water quality and the factors that affect it; (2) provide a broad picture over time of the situation in different regions with different land-uses, climates, and hydrologic characteristics; and (3) provide an overall measure of the transport of substances through the surface- and ground-water systems of the Nation. The following six USGS programs have major status and trends monitoring components that directly or indirectly support Clean Water Act objectives:

The Federal-State Cooperative Program has been in operation for about 100 years. This 50:50, jointly-funded program is a unique partnership between the USGS and State, regional, and local governmental agencies to enhance water-resources information nationwide. Although the cooperating agencies provide at least half the funds, the USGS conducts most of the work. The goals of the program are to collect data and develop information, and to use that data and information to appraise the availability, distribution, and the physical, chemical, and biological characteristics of water resources during the conduct of investigations of interest both to the Federal Government and the cooperating State or local agency. Since the early 1970's, the emphasis of Cooperative Program investigations has shifted toward water quality issues such as aquifer contamination, river-quality assessments, the quality of storm runoff, and the effects of coal mining and agricultural runoff on the Nation's waters.

The Hydrologic Benchmark Program, established in 1964, is a network of 58 streamflow and water-quality monitoring stations installed in small pristine watersheds that have experienced little human influence on their hydrologic characteristics. This network provides a baseline estimate of water-quality conditions with minimal point-source or land-use influences, and has been instrumental in the early detection of the effects of acidic deposition on the water quality of certain pristine areas.

The National Stream Quality Accounting Network is a water-quality network of 384 monitoring stations, established in 1973 at the mouths of most of the larger river basins in the country to relate water-quality trends to upstream land- and water uses, and to account for the mass transport of selected constituents from the American continent. Examples of results from this network include the relationships between: (1) point-source controls and fecal bacteria counts; (2) nitrate in streams and atmospheric emissions of nitrous and nitric oxide; (3) nitrate in streams and agricultural activity; and (4) dissolved solids in streams and the effects of climate, geology, and various human activities.

The Acid Rain Program was initiated in 1982. As the lead Federal agency for atmospheric deposition monitoring, the USGS coordinates the design and operation of the interagency National Trends Network, a 150-station network for collecting data on the quality of atmospheric deposition in the United States. This a rural network that reflects regional characteristics of precipitation chemistry without the localized

effects of nearby sources of air pollution. The Acid Rain Program also includes continuing, long-term, more intensive data collection and analysis in 13 representative, sensitive areas to provide a basis for evaluating the effects of acid deposition on lakes, streams, and ground water.

The quantity and quality of water used in the Nation is of vital importance to water policymakers, planners, resource managers, and water users. In 1978, the National Water-Use Information Program was established to determine how much water is withdrawn for use, how much water is consumptively used, the purpose for which the water is used, and how much water is returned to the environment. State-level water-use programs and associated computer information systems have been cooperatively developed in 48 States and Puerto Rico.

Beginning in 1986, the USGS began efforts to test and refine concepts for a National Water-Quality Assessment Program which we refer to as NAWQA. The questions being addressed by the NAWQA program include:

1. What are current national water-quality conditions? In other words, what are the occurrences, concentrations, and loads of specific physical, chemical, and biological measures in selected parts of river basins and aquifer systems, nationwide?
2. Are water-quality conditions getting better or worse?
3. What are the causes of poor water quality?
4. What are the implications of our findings on monitoring, resource management, and regulatory practices?

Major river basins and aquifer systems, referred to as study units, are the principal building blocks of the NAWQA Program. The full-scale program is accomplished through investigation of a set of 60 study units distributed throughout the Nation. The study units are large and range in size from about 1,200 to 45,000 square miles. Collectively, the study units encompasses about 45 percent of the land area of the conterminous United States, and about 60-to-70 percent of the Nation's water use.

NAWQA provides specific water-quality information to those individuals who set policy, write regulations, establish priorities, or manage water resources. For example: results from the NAWQA study conducted in the Yakima River basin showed that concentrations of the pesticide DDT in fish are among the largest measured in the Nation and commonly exceed guidelines for the protection of birds and other fish predators. This finding was somewhat of a surprise because use of this pesticide was banned almost two decades ago. Based on these findings, the Washington Department of Health is conducting follow-up studies to evaluate the potential human health effects of eating fish in the basin, and has issued recommendations to the public that they limit their consumption of bottom-dwelling fish.

Another example is the findings related to the pesticide atrazine in the lower Kansas River basin. This NAWQA study contributed to the decision by the State to establish a pesticide management area in the Delaware River basin in northeastern Kansas. This would decrease concentrations of pesticides to acceptable levels in surface water and ground water by a combination of management and conservation practices.

V. Role of Monitoring and Evaluation in Gauging the Success of the Clean Water Act

We expect that USGS' monitoring and assessment activities will contribute to the Nation's ability to evaluate whether, and to what extent, the programs undertaken pursuant to the Clean Water Act (and other acts) are helping us reduce public health and environmental risks.

VI. Watershed Management

Our only comment on the watershed management provisions of the Clean Water Act reauthorization is technical in nature and relates to the important hydrologic aspects of ground water.

In many watersheds, ground water should be an important component of watershed management strategy. Ground water has been estimated to supply an average of 40 percent of streamflow, nationwide, but in some areas (for example Long Island, the Delmarva Peninsula, or the Sand Hills of Nebraska) the figure may be as high as 95 percent. In developing measures to control and prevent nonpoint sources of pollution, attention should be given to the complex interactions between surface water and ground water, and the extent of ground water influence in a particular watershed system. It is a fact that many remediation techniques that retard or reduce surface-water runoff can cause an increase in ground-water recharge. This only delays rather than eliminates the discharge of pollutants into surface water. Finally, arbitrary time frames that may be enacted to attain standards may not

produce desired results in certain watersheds because polluted ground water may continue to discharge to streams many years after the source of pollution has been eliminated.

VII. Ending statement

Mr. Chairman, that concludes my formal testimony. I would be happy to answer any questions you may have at this time.

TESTIMONY OF MICHAEL J. SPEAR, ASSISTANT DIRECTOR, FISH AND WILDLIFE SERVICE, U.S. DEPARTMENT OF INTERIOR

I appreciate this opportunity to appear before you regarding the role of the Fish and Wildlife Service in the Clean Water Act (Act).

Service Trust Resources Associated with the Clean Water Act

The Service's interests in the Clean Water Act stem from our stewardship responsibilities for endangered Species, migratory birds, anadromous fish and several marine mammals, all of which depend on clean water to survive. A majority of these species also live in wetlands and other aquatic habitats for much of their life histories, and are therefore directly dependent on the success of the Act in achieving its goal of maintaining the biological integrity of the waters of the United States. The Service has trust responsibilities for over 90 million acres of lands in the National Wildlife Refuge system. Clean water is essential to maintain these refuges, as well as to operate our system of National Fish Hatcheries.

In addition to our need to comply with the Act on our own lands and facilities, the Service also has authorities for direct involvement in Clean Water Act activities, including section 404(m) of the Clean Water Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, and the National Environmental Policy Act.

The Service has developed widely acknowledged expertise in the evaluation of man's effect on living natural resources. This expertise lies not only in our research program, but in our network of 70 Ecological Services field stations; 54 Fish and Wildlife Management Assistance Offices; 78 hatcheries; 15 fish health and technology centers; and over 500 National Wildlife Refuges and wildlife management areas. We believe that our authorities, in conjunction with our field expertise, can enhance effective implementation of the law.

Clean Water Act Issues

Since it was first passed in 1972, the Clean Water Act and its subsequent amendments have resulted in substantial improvements in the quality of the Nation's waters and a reduction in the rate of loss of our Nation's wetlands. We believe the programs established in the Act are sound, but, as with any program, can be improved.

The goals of the Clean Water Act are "to restore and maintain the chemical, physical and biological integrity of the Nation's waters". In the past, implementation of the Act has focused on the chemical integrity of the Nation's waters, with less effort on biological and physical integrity. This focus is changing, and we are ready to assist the Environmental Protection Agency (EPA) by providing technical assistance and consultation on a variety of biological resource issues. One reason why we are committed to provide this assistance is because of our strong belief that effective implementation of the Clean Water Act can help prevent the need for further listings of threatened and endangered species.

At present, 97 of the 775 species of freshwater fish native to the United States are listed as endangered or threatened, along with 63 mussel species, 12 crustaceans and 11 amphibians. The Service also maintains a list of candidates for potential listing which includes an additional 157 native fish, 59 species of aquatic mussels and 60 amphibians. Clearly, if the status of these species is an indicator, the biological diversity of the Nation's aquatic systems is still being threatened. It is smart both ecologically and economically for our society to make every effort to prevent species from reaching such desperate status as to require listing as threatened or endangered. As Secretary Babbitt has frequently noted, managing an entire ecosystem for harmonious development is economically far more prudent than having to undertake drastic measures to save an endangered species that will have serious economic impacts on that ecosystem.

One means to prevent this is by protecting wetlands. The protection and restoration of the Nation's wetlands are essential to meeting the goals of the Clean Water

Act, not only because they are key components of hydrologic systems, but because of their particular importance to living biological resources. Many freshwater, anadromous and estuarine fish species, more than 50 percent of North America's migratory birds, and more than one third of all threatened and endangered species are dependent on wetlands. The Service can assist more effective implementation of section 404 of the Act through expertise gained during a long history of wetlands inventory, protection, restoration, monitoring and management activities.

In the same vein, the Service's biological expertise and the Department of the Interior's hydrological expertise can be used to enhance development, review and implementation of Federal water quality criteria and State water quality standards. The Service's goal is to resolve potential conflicts between proposed alterations of habitat and the resources we hold in trust for the public. With early coordination, problems can be identified before they reach a level too difficult to resolve. For instance, setting protective water quality standards, and writing Section 402 and 404 permits that are consistent with those standards, may be more cost-effective and better for the environment than seeking remediation of contaminated sediments after the discharges and releases have essentially ceased.

Preventing further degradation of waters of the United States, through more effective implementation of antidegradation policies, and through protection and expansion of Outstanding National Resource Waters are also important to meeting the goals of the Clean Water Act. Maintaining high quality waters will help maintain the aquatic resources that live in them.

Effective management of our aquatic ecosystems requires a watershed-based approach to program planning, monitoring and assessment. The Service has been involved in numerous watershed-wide fish and ecosystem restoration efforts around the country, such as the Great Lakes lake trout restoration, and watershed restoration activities on the Clinch River, Virginia and Chehalis River, Washington. From these experiences, we have learned the value of taking a landscape perspective in management activities, and can lend our experience and expertise in any watershed or river basin planning activities that may be established in the future.

Water Quality

Our Division of Environmental Contaminants is obtaining data on the health of trust resources across the nation. These investigations have provided us insight into the "biological integrity" of the Nation's waters and have helped identify where additional emphasis on Clean Water Act activities may be needed. Let me share some examples of our effort. During a recent Clean Water Act Reauthorization Hearing, Senator Baucus commented on continuing threats posed by persistent, bioaccumulative toxic compounds in the Great Lakes ecosystem and other areas of the country. He referred to reports of continuing impacts on trust resources of the Service, including reproductive effects such as bill and leg deformities, endocrine disruption, and embryo mortality in migratory colonial waterbirds.

Our ongoing investigations in the Great Lakes watershed have confirmed that certain contaminants continue to threaten colonial waterbirds, as well as Bald Eagles, with reproductive impairments including deformities and other developmental problems. This Spring, while monitoring eagle reproductive success, our field personnel located three nestling eagles with beak defects common to colonial waterbirds nesting in the Lakes.

I have brought an enlarged photograph of one of these eaglets showing its deformed beak. These young birds have been collected and are undergoing further evaluations. We have found that adult eagles which feed on Great Lakes prey have lower reproductive success than eagles feeding on inland lakes and rivers. Eagles nesting along the Great Lakes continue to have significantly higher levels of several contaminants measured in their blood and dead egg samples than inland eagles.

The problem is widespread across the Great Lakes and requires a basinwide, watershed approach to seek additional reductions in persistent contaminants from significant contributing sources in a cost-effective manner. The Service has been working with the EPA and the States on a variety of fronts, including the Great Lakes Initiative which is addressing wildlife water quality criteria guidance. This coordination should assist in development of protective and restorative actions to be instituted regarding these continuing biological problems.

In addition to wildlife, fish are also still being affected by contaminants in waters and sediments. In a recent article in *The Washington Post* (Monday, July 12, 1993) entitled, "Medical Detective Finds Clues on Cancer Among Fish and Pollution" John Harshbarger, the head of the Registry of Tumors in Lower Animals at the Smithsonian, stated that, "all the evidence supports the idea that if you find liver cancer in fish, it's caused by chemicals."

The article notes that liver cancers have been found in at least 18 species of fish that live and feed primarily near the bottom of lakes, streams, and rivers. Some of these findings are the result of studies conducted by Service field investigators in our Ecological Services and Research programs. Investigators have found tumors in fish from many polluted waterways, including: the Buffalo, Niagara and Hudson rivers in New York; the Cuyahoga and Black rivers in Ohio; the Elizabeth and York rivers in Virginia; Black Rock Harbor near Bridgeport, Conn.; Narragansett Bay, Rhode Island; New Bedford Harbor and Quincy Bay in Massachusetts; and Puget Sound in Washington state.

Refuge Lands

Our National Wildlife Refuges are being directly impacted by water quality problems. A few examples include:

- Salton Sea National Wildlife Refuge—Based on shoreline surveys, aerial surveys and clean-up efforts in 1992, an estimated 150,000 eared grebes had died (about 8% of the North American population). Contaminant analyses of eared grebes indicated elevated levels of selenium, mercury, DDE and chromium in eared grebe livers, when compared to previous samples from the Salton Sea. Selenium has increased over 200 percent in three years. All liver samples from dead, sick, and healthy (defined by normal behavior) eared grebes had selenium levels above threshold levels known to cause adverse impacts. Endangered species that may be at risk include the Yuma clapper rail, California brown pelican, desert pupfish, and peregrine falcon. Adverse effects on the reproductive success of the eared grebe may be expected as a result of documented elevated concentrations of selenium and DDE. Elevation of selenium and mercury may have contributed to the die-off indirectly by compromising the birds' immune systems.
- Wheeler National Wildlife Refuge—Over 400 tons of DDT and metabolites are in bottom sediments of Huntsville Spring Branch located on the refuge.
- Eutrophication of water bodies located on various refuges, including Buffalo Lake on the Buffalo Lake National Wildlife Refuge, Texas; Camas wetlands on the Camas National Wildlife Refuge, Idaho; and the Bear River, which runs into the Bear Lake National Wildlife Refuge, Idaho. Eutrophication is the process by which a body of water becomes over-enriched with nutrients and sediments. This results in a plant populations explosion, causing serious degradation of water quality, extreme changes in species composition, and alteration of beneficial uses.

Wetlands Regulation

Prior to the 1970's, the average annual loss of wetlands was approximately 450,000 acres. Between the mid-1970's and mid-1980's, this loss rate was reduced to approximately 290,000 acres per year, and further reductions in the rate of loss have probably been realized since the 1980's. Although there is no question that enactment of section 404 of the Clean Water Act and the Swampbuster provisions of the 1985 and 1990 Farm Bills have contributed to this positive trend, wetlands destruction continues at an alarming rate. Yet less than half of the historic wetlands of the lower 48 states remains, and a significant portion of what remains is significantly impaired. These factors have contributed to the progressive impoverishment of our biotic systems.

I would like to provide you with two examples of how wetland habitat losses, like other Clean Water Act-related issues, have affected species populations the Service is entrusted to protect.

Bottomland Hardwood Forests. Bottomland hardwood forests are in greatest abundance in the Lower Mississippi River Valley, which once supported the largest expanse of forested wetlands in the United States. Of the 24 million acres of forested wetlands which formerly existed in this region, less than 22 percent remained in 1978, and only 20 percent were projected to remain by 1991. Most of these losses have been due to pre-Swampbuster era conversion of forested wetlands to farmlands through drainage and landclearing.

The Louisiana black bear, listed as "threatened" under the Endangered Species Act, historically inhabited the bottomland hardwood forests of Louisiana, southern Mississippi, and eastern Texas. It is dependent on the maintenance of large tracts of high quality bottomland hardwoods, as well as forested corridors to connect those tracts. Landclearing for agriculture and other purposes reduced this species habitat by nearly 80 percent, thereby necessitating its listing as threatened in 1991. At present, the Louisiana black bear's range is restricted to small populations within

the bottomland hardwoods of the Tensas and Atchafalaya River Basins of Louisiana, and scattered populations in Mississippi.

Vernal Pools. California's vernal pool wetlands have sustained a significant and continuing loss from agricultural conversion, flood control activities, and residential/commercial development activities, much of which is currently being authorized through nationwide general permits. As a result, by 1978 it was estimated that 90 percent of the original vernal pool habitat in the Central Valley had been lost. More recent estimates place this loss figure at nearly 99 percent.

As a consequence of these losses, there has been a corresponding decline in the abundance and diversity of plant and animal species dependent on vernal pool wetlands. Currently, ten California vernal pool plant species are listed as endangered, while 55 rare vernal pool plant species are designated as candidates for possible Federal listing. In addition to plants, five freshwater invertebrate species restricted to vernal pools are now proposed for listing as endangered. Many more vernal pool species are likely to be added to the Federal list as threatened or endangered if losses of these wetlands are not curtailed.

There are a variety of mechanisms through which the loss or degradation of wetland habitats I have described has continued to occur. Many activities have not, in the past, been regulated under the Clean Water Act, such as discharges associated with landclearing, ditching, channelization, and other excavations in wetlands. In addition, unauthorized activities frequently go unobserved. Finally, there are the adverse effects of land use practices adjacent to wetlands and other aquatic habitats, such as stormwater and other runoff from agricultural, municipal, and industrial sources, which significantly impair wetland functions.

Since its inception, the section 404 regulatory program has substantially reduced the harm to wetlands and other aquatic habitats due to development activities. Nevertheless, losses to fish and wildlife resources continue in spite of the program. In order to attain a greater degree of protection, and truly minimize, if not avoid, net habitat losses, we must take a much broader view of what is needed to meet the goals of the Act, and recognize that wetlands protection must always be a part of this approach.

I would like to close by commending the Committee for providing us this opportunity for discussion of future directions of the Clean Water Act. I would reiterate that the Service has a major role to play in the successful implementation of the Clean Water Act. We have a substantial land base that is directly regulated and affected by Clean Water Act programs. Thus, we are committed to managing our lands and other trust resources in a way that fulfills the goals of the Clean Water Act. Our field force stands ready to provide technical assistance and consultative services to EPA and the States in meeting trust resource responsibilities.

We look forward to continuing our collective efforts with this Committee, the Environmental Protection Agency, other Federal agencies and the State agencies in improving the Clean Water Act.

TESTIMONY OF ROBERT H. WAYLAND, III, DIRECTOR, OFFICE OF WETLANDS, OCEANS, AND WATERSHEDS, ENVIRONMENTAL PROTECTION AGENCY

Good morning, Mr. Chairman and Members of the Subcommittee, I am Bob Wayland, Director of the Office of Wetlands, Oceans, and Watersheds within the U.S. Environmental Protection Agency's (EPA's) Office of Water. My testimony today will address three topics: water quality monitoring, federal coordination, and water conservation.

MONITORING

Water quality monitoring is the means by which we know the physical, chemical, and biological condition of our waters, and the effectiveness of actions undertaken under the Clean Water Act (CWA) or other laws for improving water quality. Through scientifically-valid monitoring, we detect water quality problems, ascertain if our waters are meeting societal goals such as State water quality standards, design protection or remediation measures Where necessary, and measure the effectiveness of our programs over time. Monitoring is our continual feedback loop, essential to set strategic planning goals and agency directions, direct resources and set informed program priorities, and measure how well strategic goals are met.

Monitoring and information management activities are critical at all levels of water management—at an individual stream or estuary, at a discharge facility or on a farm, in a watershed, or at a State or national program level. To manage and

to monitor well, and to evaluate, it is essential to set strategic goals and to articulate the environmental results we desire.

Strategic Planning/Environmental Indicators

In EPA's water programs we are well advanced in our strategic planning process. Monitoring information is the cornerstone of our efforts. We begin with monitoring information to tell us what physical, chemical, or biological water quality problems are preventing us from reaching the strategic goals we set, and we end with monitoring to evaluate if our management programs have resulted in the environmental improvements we seek.

To measure if we are meeting our strategic goals, we have chosen specific environmental indicators. Environmental indicators are identified data or sets of data that we can measure and that clearly communicate information to managers and the public. For instance, one of our goals is to conserve and enhance ecosystems, and the indicator for that goal is the health of the fish and the insect communities that live in and on the water.

We collect data to measure our environmental indicators, but much useful data is also collected by other Federal, State, local, and private partners. It is therefore critical to us to work closely with other programs and agencies to use comparable collection and quality assurance/quality control methods, link our data Systems, and employ new technologies such as Geographic Information Systems and remote sensing.

Range of Programs

A large number of water quality monitoring programs are mandated by the CWA and by other statutes and agency missions. These monitoring programs cover a wide range of activities: data collection to fulfill specific objectives; data analysis with appropriate levels of confidence; information storage and retrieval; and, analysis and reporting to decision makers. Information from these monitoring efforts is essential to initiate, assess, and improve our management efforts.

Water quality monitoring programs are complex and the many activities included must be tailored to meet clearly specified and differing objectives such as compliance, ambient water quality, trends, or problem identification monitoring. The monitoring picture is made more complex because many Federal and State agencies monitor for a wide range of purposes, as do local, private, volunteer, and business and industry groups. Experience has shown that properly trained volunteers can perform basic sampling and simple analytic tasks with accuracy and reliability while keeping expenses low. This program has proved to be an excellent method for educating the public and fostering the stewardship of waterbodies, particularly estuaries.

There are several major Federal monitoring programs to measure status and trends regarding the quality and quantity of the nation's waters for specific purposes, such as EPA's Environmental Assessment and Monitoring Program, the National Water Quality Assessment Program of the U.S. Geological Survey (USGS), the National Oceanographic and Atmospheric Administration's (NOAA) National Status and Trends Program, and the U.S. Fish and Wildlife Service's Wetlands Status and Trends Program and new Biomonitoring of Environmental Status and Trends Program, among others. Although mandated by statutes other than the CWA, the information generated by these and other activities provide important information to support CWA goals. For example, the USGS focuses on quantity and quality of water resources, with particular emphasis on hydrologic and geochemical processes and the impacts of natural and human factors on water quality. The Department of Agriculture investigates the impacts of agriculture and forestry practices on water quality. NOAA monitors coastal waters to assess status and trends of coastal water quality. The Fish & Wildlife Service monitors changes in the physical acreage of wetlands over time as well as the status and trends of wetlands. The goals of the CWA will be best met by our continuing use of the wide range of water quality related information generated by all Federal agencies.

In addition, States, Territories, Tribes, municipalities, industrial dischargers, volunteer groups and private organizations have their own ambient and compliance monitoring programs. It is essential to use our limited resources wisely by asking the right questions before we monitor and by sharing data gathered by these many complementary programs.

Federal Leadership: Monitoring and Information Systems

We are committed to compatible and well coordinated water quality monitoring programs. We showed our leadership when, in January of 1992, EPA and USGS es-

established a three-year Intergovernmental Task Force on Monitoring Water Quality (ITFM). The ITFM includes EPA, USGS, eight other Federal agencies, and ten State, Interstate, and Indian government organizations. The group is chaired by EPA. USGS is the Vice Chair and Executive Secretariat. The ITFM is part of the Interdepartmental Water Information Coordination Program administered by the USGS under OMB Memorandum 92-01.

The ITFM has a workplan and outline of products for five major problem areas in monitoring: institutional collaboration; environmental indicators; field and laboratory methods comparability; information management and sharing; and assessment and reporting. It recommends a five-pronged national strategy to address these problem areas. The strategy includes such specific products as environmental indicators to ascertain if water quality standards are being met, an outline for an optimal monitoring program, and creation of a National Water Quality Monitoring Council to coordinate Federal, State, private and volunteer efforts nationwide.

In this context, I would like to highlight the importance of linking the various information systems that store, retrieve and facilitate assessment of monitoring data. Most Federal agencies have their own information systems to store their program's data and to meet their specific objectives, and most agencies can benefit from using data from other systems. For instance, EPA's system, STORET, which is the country's largest water quality data base, includes water quality data from States and other Federal agencies as well. As an example, one-quarter of the information in STORET is from USGS and they provide monthly updates. As EPA modernizes STORET, we are committed to do so working closely with USGS which is also modernizing its water information system, called NWIS-II. NWIS includes data on both water quantity and quality. Through the ITFM the other Federal and State agencies are trying to ensure that a large number of new and existing data systems can share information more easily.

With this as background, let me applaud the efforts of S. 1114, the "Water Pollution Prevention and Control Act of 1993", to acknowledge the importance of monitoring in our water management efforts and increase the effectiveness of monitoring nationwide.

State Monitoring Programs

We are pleased to see the bill give deserved prominence to State monitoring programs, and the opportunities for States to also use information generated from Federal, discharger and volunteer monitoring programs. We support the Senate's call for minimum State water monitoring programs. Stronger State programs will help to target CWA programs to the impaired waterbodies which need the most attention and to help protect areas that meet water quality standards. Strong and more complementary State monitoring programs will generate a more uniform nationwide water quality assessment and allow us to aggregate State information into a better national picture in our reports to Congress. In addition, stronger State water quality monitoring programs, including both ambient and compliance monitoring, will help the States, EPA, and other Federal agencies do a better job of determining on a national and regional level whether our management and control programs are achieving the environmental results we seek. In addition, stronger State programs will allow us to begin to address gaps in current monitoring. We must recognize, however, that the stronger State water quality monitoring programs called for in S. 1114 will significantly increase State costs while, in general, State monitoring programs have been reduced over the last several years, due to cuts in federal and State program support and increased mandates in other areas.

We also support the provision in S. 1114 which would change the State and Federal water quality reporting cycle from two to five years. A five-year cycle will help the States better integrate their monitoring and abatement programs on a watershed basis. We support S. 1114's recognition of the importance of volunteer monitoring. These committed volunteer groups can provide quality-assured water resource data and help States accomplish monitoring objectives. Similarly, the recognition that dischargers should in some circumstances contribute significant information on ambient water quality is laudable.

Water Quality Monitoring Coordination

We wholeheartedly agree that there needs to be a mechanism to ensure Federal, State, local, private, and volunteer monitoring programs are fully coordinated. We strongly encourage use of existing coordinating mechanisms. We have shown our commitment to coordination through the ITFM, which has exhibited an impressive level of interagency cooperation to produce a national strategy for better monitoring of all water resources, including rivers, streams, lakes, ground waters, coastal

waters, associated aquatic communities and habitat, wetlands, and sediment. The ITFM has already Proposed a national monitoring strategy and a permanent structure for coordinating its implementation. As ITFM is part of USGS's Water Information Coordination Program, its recommendations have received wide agency approval at the highest management levels.

The ITFM is addressing all of the elements of S. 1114 and more. We should build on existing efforts, not duplicate them. We therefore question the need to establish a Water Quality Monitoring Council in the law as proposed by S. 1114. Among other reservations, I note that the Federal, State and other members of the Council Proposed by S. 1114 are Substantially less inclusive than our current ITFM, and the ITFM also addresses the important problem of comparability of field and laboratory methods, which S. 1114 does not.

Relationship to Other Federal Research and Monitoring Activities

We believe S. 1114 should recognize the value of other agencies' research and information in achieving CWA goals. Different statutes such as the Coastal Zone Management Act, the Safe Drinking Water Act, the Marine Protection, Research, and Sanctuaries Act, the Water Resources Development Act of 1992, and the National Coastal Monitoring Act mandate water-related research programs in EPA and many Federal agencies. The Water Resources and Coastal Ocean Science Subcommittees of the Federal Coordinating Council for Science, Engineering, and Technology coordinate research among all Federal agencies. The CWA should provide for close coordination with these other programs where appropriate to achieve CWA goals. This will also minimize conflict arising from separate research mandates in other legislation.

FEDERAL COORDINATION

The foregoing discussion on monitoring provides an excellent example of effective interagency coordination on issues relating to water quality. Other examples abound in water programs administered by EPA. We have long recognized that, in order to be effective in protecting and maintaining our nation water resources, the federal government must provide the leadership in adopting an integrated approach to water management. Coordination and consistency among federal agencies is essential, and, as you know, will be no small task. It would involve 18 agencies in seven departments, and seven independent agencies with 25 separate water programs and some 70 separate appropriations accounts. We are beginning to forge the working relationships that will allow us to provide this leadership. I would like to give you a number of examples.

Policy and Program Development

Coastal America is a collaborative, multi-agency effort to solve environmental problems along the Nation's shoreline. Problems include the loss and degradation of habitat, pollution from nonpoint sources, and contaminated sediments. All three are contributing to species declines and severely damaged habitats. This combined effort originally involved the U.S. Army Corps of Engineers (COE), EPA, U.S. Fish and Wildlife Service (FWS), U.S. Geological Survey (USGS), the Minerals Management Service (MMS), National Oceanic and Atmospheric Administration (NOAA), USDA, the Department of Transportation, and the National Park Service (NPS). More than a dozen agencies now participate in the Coastal America process. Through a series of relatively small scale projects, Coastal America provides examples of successful projects and demonstrates new approaches to addressing coastal living resources concerns in seven geographic regions.

We are also using an interagency process to attempt to resolve some of the especially complex and controversial issues associated with the wetlands program. Our goal is to provide clarity and consistency in federal wetlands policy. As directed by Congress, EPA has initiated a wetlands study by the National Academy of Sciences. To assist with this study, a federal committee composed of EPA, U.S. Department of Agriculture (USDA), the COE, and FWS are working together to ensure that consistent policy and programs will be the outcome of these efforts.

EPA is working with many other federal agencies, at both Headquarters and Regional levels, to provide momentum for the watershed management approach. We strongly believe that coordination among Federal agencies is necessary to plan and execute an effective nationwide watershed management effort. In March of this year, EPA and 12 other federal agencies (including four agencies from the Department of the Interior, three from USDA, the Federal Highway Administration, COE, Tennessee Valley Authority, and NOAA), local sponsors, and numerous nongovernmental groups put together a major conference—Watershed '93. More than one

thousand people participated in the conference, including representatives from forty two States, Puerto Rico, Canada, South Africa and the United Kingdom, representing citizens and environmental groups, regional and federal agencies, and business and industry. The conference examined numerous successful watershed management projects and generated tremendous enthusiasm and momentum to redirect our programs and energies toward a locally driven watershed management approach.

The Coastal Zone Act Reauthorization Amendments of 1990 required EPA to develop "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters" in order to assist state and local governments, as well as landowners and operators, in identifying and implementing the most effective management measures to prevent and control nonpoint source pollution. The guidance reflected substantial contributions from USDA's Soil Conservation Service (SCS), Extension Service, and U.S. Forest Service, as well as NOAA, the FWS, other federal agencies, and experts from state water quality and coastal zone management agencies.

Program Implementation

The National Estuary Program (NEP) exemplifies the watershed management approach and the potential for coordination among federal and nonfederal stakeholders. The goal of the program is to protect and improve water quality and enhance living resources. The NEP identifies nationally significant estuaries threatened by pollution, development or overuse, and requires Comprehensive Conservation and Management Plans (CCMPs) to ensure ecological integrity. A management conference is convened in each NEP with a wide variety of stakeholders, who are responsible for identifying the problems and developing a CCMP to be implemented by participating parties. Representatives of federal agencies often serve on Management Conference committees. All federal agencies have the opportunity to review the water quality management plan on a continuing basis to determine whether any of their projects or programs potentially assist or conflict with the goals of the plan. As part of the estuary program, for example, EPA works closely with NOAA to assess current coastal conditions and determine whether conditions are improving or deteriorating. NOAA contributes important scientific information that is now being used by the NEP management conferences. The Food and Drug Administration shares its expertise in assuring the safety of fish and shellfish, and representatives of virtually every other agency have been actively involved in planning and implementation activities.

The Great Water Bodies Programs take a comprehensive, geographically targeted approach and all include smaller scale watershed projects as an important part of their overall efforts to restore and protect their waters. At yesterday's hearing, we discussed the Chesapeake Bay, the Great Lakes, and the Gulf of Mexico programs in some detail. I would like to highlight aspects of these programs that illustrate growing federal agency cooperation and coordination.

The Chesapeake Bay Program has not only been at the forefront of federal/state cooperation, but also has established a framework for cooperative work by federal agencies. EPA has ten formal Memoranda of Understanding with other federal agencies to specifically facilitate cooperation within the Chesapeake Bay Watershed. The Poplar Island Restoration Project, currently in its planning phase, is an example. Poplar Island, located off Maryland's Eastern Shore, once encompassed several hundred acres of forests, wetlands, and shoreline habitat, and provided valuable fish and wildlife habitat. The Island has eroded into several small remnants, and is in danger of disappearing entirely. Through the cooperative efforts among EPA, FWS, COE, NOAA, and the State of Maryland, clean dredged material from Baltimore Harbor approach channels, that would have been disposed in a nonproductive manner, is now planned for transport to Poplar Island and placement in order to restore valuable habitat.

The Bay program has also given high priority to the creation of fish passages for anadromous species of fish, e.g., shad, herring, and striped bass, and catadromous species, e.g., American eel. Thousands of miles of Spawning habitat within the Bay watershed have been closed to these species, many by dams built two centuries ago. A concerted effort begun in 1988 by EPA, NOAA, FWS, DoD, Maryland, Pennsylvania, Virginia, and the District of Columbia, as well as private organizations, has already opened up 174 miles of historic migratory fish spawning and nursery habitat. Fifty more miles of habitat are projected to be opened up this year, and hundreds of miles in the next few years. In addition to the economic value to commercial and recreational fisheries, these migratory species can play a significant ecological role for the entire Bay ecosystem.

The Great Lakes Program is another excellent illustration of interagency cooperation. EPA joined agencies that have stewardship responsibilities for the Lakes in developing a shared five-year strategy and in carrying out "on-the-ground" projects which rely on multi-agency teamwork. Notable examples include: (1) the Assessment and Remediation of Contaminated Sediments program to assess contaminated sediments and test remedial technologies (COE, the Bureau of Mines, and the Bureau of Land Management); (2) the Green Bay mass balance study, which addressed the role of bottom sediments in ecosystems contamination (NOAA, the Coast Guard, USGS, as well as co-leader Wisconsin and the Michigan Department of Natural Resources); and (3) an EPA and FWS fish monitoring program that has yielded a long-term perspective on contaminants in lake trout.

The Gulf of Mexico Program has been the catalyst for many cooperative projects. One pervasive problem in the Gulf is the high level of bacteria in the near shore waters from inadequate disposal of human waste. This is often the reason that shellfish beds must be closed to harvest. EPA, FDA, and the coastal states are working together to find ways to address this problem, which is often caused by leaking and inadequate septic tanks. FDA and EPA are sponsoring educational programs and demonstration projects of appropriate technologies and have also convened a workshop to discuss standardizing Septic tank operations and maintenance requirements Gulfwide. In addition, EPA, FWS, and the Texas Parks and Wildlife Department have established the Gulf Ecosystem Management Sites (GEMS) program to identify and protect habitats, including those used by threatened or endangered species; fish nurseries; and rare and threatened habitats, such as mangrove swamps and submerged aquatic vegetative areas.

At the smaller watershed management level, EPA has experienced successful working relationships with other federal agencies around site-specific problems. I would like to provide you with just a couple of illustrations.

The Canaan Valley Watershed is a unique combination of fragile wetland ecosystem, drinking water source, prime trout-fishing stream, vacation home and recreational development, and an annual major off-road vehicle race. In 1975, the Canaan Valley was designated a National Natural Landmark. EPA, the COE, USGS, FWS, SCS, and many state, local and private organizations are active partners in the watershed management process initiated in 1990.

Federal and state agencies are involved in the Upper Arkansas River Watershed Initiative in Colorado. Stressors to the watershed are associated with past mining practices, erosion of rangeland, loss of riparian and wetlands areas, and hydrologic modification. A 1989 technical study of the basin revealed that improved coordination among agencies would be essential in tackling water quality problems. Initially, EPA signed a Memorandum of Understanding with the Colorado Departments of Health and Natural Resources, and the Bureau of Reclamation. Subsequently, other federal, state and local organizations have become part of the Watershed Initiative Team. These agencies include: BLM, Bureau of Mines, FWS, the Forest Service, USGS, and SCS.

Even in our staffing arrangements, we have begun to realize the importance of obtaining interagency cooperation and coordination as well as obtaining multidisciplinary perspectives on shared issues. Toward that end, EPA and other federal agencies and departments have established full-time interagency liaison positions. For example, the U.S. Forest Service has two liaisons in EPA's Headquarters offices, and four in EPA's Regions, one at the Chesapeake Bay Program office, one with the Puget Sound Cooperative River Basin Study Team, and one in EPA's Montana field office. NOAA and USFWS have complete offices in Annapolis, Maryland to coordinate directly with EPA's Chesapeake Bay Program. The Soil Conservation Service also has a liaison with EPA's Headquarter's office and liaisons in all of EPA's 10 Regions. The liaison position has not only improved the process of communication among federal partners, but also has proven to be invaluable in understanding other federal perspectives on environmental issues. Consequently, the opportunity for resolutions on complex issues has increased substantially through this staff position.

The wetlands program in EPA's Region III (VA, MD, PA, WV, DE, D.C.) is, in part, implemented through a series of Memoranda of Agreement with the FWS, COE, National Marine Fisheries Service, and the FHA. Thus, we have obtained a broader and more coordinated perspective toward wetlands, integrating the permitting process and achieving compliance with the National Environmental Policy Act via the environmental impact statement process.

WATER CONSERVATION

S. 1114 also addresses water conservation, which it proposes to promote by coordinating federal policies, authorizing technical assistance to public agencies, and establishing a national information clearinghouse. Up to \$10 million per year is authorized for this effort.

In general, EPA supports the intent of the water conservation provisions of S. 1114. By using water more efficiently, we can both prevent pollution and reduce the need for and cost of water supply and wastewater treatment facilities. Thus, water conservation can be a very cost-effective approach to addressing significant water quality problems. Economic and environmental benefits of water conservation include reducing industrial pollutants through recycling, reducing the need for new water supplies, protecting aquatic habitats (because using less water helps maintain streamflows), and conserving energy used to pump, treat and heat water. Several recent studies, including the report of the Working Group on Water Infrastructure, Water Quality 2000, and the Long's Peak Working Group, have all pointed to the importance of more efficient water use in maintaining our nation's water quality.

I am pleased to see an emphasis on technical assistance and information transfer in the bill. As infrastructure capital costs increase and the availability of sites for water supply and wastewater projects decreases, I believe we will see information needs for water conservation and its relationship to water services planning grow exponentially over the next several years. Municipalities, utilities, States, businesses, and industries urgently need reliable information on cost-effective water conservation technologies and practices as part of their overall water resources planning. EPA has already taken steps to initiate a national clearinghouse of water efficiency information to help fill these information needs. We also applaud the bill's voluntary approach to water conservation set forth in section 403 of S. 1114, and we support the requirement in section 205 of the bill that pollution prevention plans address water use efficiency. At present, encouraging water conservation and integrated resources planning first through better coordination, technical assistance, and information transfer, as this bill does, is our preferred approach. We also recommend that the Committee consider an additional approach: allowing some limited eligibility of SRF funds for water conservation programs that can reduce the need for costly wastewater infrastructure.

Let me take a few moments to update you on some of EPA's water efficiency activities. I have already mentioned the national clearinghouse that we are planning to initiate this Fall. We are also very excited about a voluntary partnership program with the commercial and institutional sector that we recently introduced. The program is called Water Alliances for Voluntary Efficiency (WAVE) and will initially focus on the lodging industry. Similar to other EPA "green" programs, WAVE partners will voluntarily commit to making water efficiency improvements in exchange for technical assistance and favorable publicity EPA will provide. Although the program is just a few months old, EPA has already signed agreements with six major hotel chains, which comprise over ten percent of the hotel rooms in the United States.

We are also helping to define and promote the concept of integrated resource planning as it relates to water resources. Integrated resource planning emphasizes a multi-disciplined, participatory approach to decision making, as does the watershed management approach, and takes into account both water supply and demand management options. We have sponsored, with the American Water Works Association, several roundtables and workshops on the subject. Based on this experience, we urge the Committee to consider the relationship between integrated resource planning and the conservation provisions of Section 403 of the bill.

To help coordinate federal water conservation activities, we have held a series of workshops with representatives of a number of federal agencies to promote water efficiency in federal policies, programs and facilities. Lastly, we have awarded close to \$1.5 million over the last several years in small incentive grants to stimulate interest in and understanding of water efficiency. Projects include research, demonstration, outreach, and the development of tools to aid local governments implement water conservation programs, and workshops such as one on the role of water efficiency in State programs sponsored by the National Governors Association.

In closing, I thank the Members of the Subcommittee for this opportunity to discuss some of EPA's extensive efforts in working with our federal agency partners. We intend to expand these efforts in the future to ensure that our policies and programs are clear, consistent and effective.

TESTIMONY OF JAYETTA Z. HECKER, DIRECTOR, RESOURCES, COMMUNITY, AND ECONOMIC DEVELOPMENT INFORMATION SYSTEMS, GENERAL ACCOUNTING OFFICE

Chairman Graham and Members of the Subcommittee:

I appreciate this opportunity to discuss work we conducted to assist the Subcommittee in its deliberations on the reauthorization of the Clean Water Act. As you know, we have conducted numerous reviews of EPA's water programs over the years to assist in Congressional oversight and to offer recommendations for improving program management. More recently, we have focused on the collection, management, and dissemination of water quality related data. As it has for several of its other environmental missions, EPA has been given leadership responsibility for ensuring the integrity of the nation's water resources. Deciding what scientific data and information to collect and how to best manage it is a central factor in water quality policies, influencing EPA's ability to perform specific statutory responsibilities.

In preparation for this hearing, you specifically asked us to identify (1) EPA's efforts to address water quality data shortcomings that are impeding performance-based assessments; (2) EPA's plans to improve water information systems; (3) factors affecting the use of remote sensing and satellite imagery for water quality-related purposes; and (4) progress made by the Intergovernmental Task Force on Monitoring Water Quality (ITFM) in addressing governmentwide data management issues. Over the last two months, we have discussed these matters with officials at EPA, the United States Geological Survey, the Office of Technology Assessment, and members of the ITFM.

Summary

Inconsistencies in how data are collected and managed by over 165 federal and numerous state water programs, along with problems involving incomplete or inadequate monitoring data, are recognized as key contributing factors that limit comprehensive assessments of water quality and safety. Initiatives are underway at EPA and on a governmentwide basis to address these data problems. First, EPA's Office of Water is reassessing strategic goals for its water programs and considering steps necessary to implement more comprehensive, performance-based measures of water quality improvements. Second, the Office of Water is proceeding with improvements to some of its important databases to facilitate access and use of data from several sources. Third, remote sensing and satellite imagery technologies could complement other analyses of physical environmental conditions, such as land use patterns, that impact water quality. Finally, EPA is chairing an intergovernmental task force that is preparing a governmentwide strategy to (1) coordinate water quality monitoring and assessment standards and procedures, and (2) improve data collection and dissemination. These efforts hold promise for improving decisions about the effectiveness of water quality programs. However, they are in early stages and face enormous challenges because of the resources and cooperation needed across federal and state governments.

Water Quality Data Are Abundant but Difficult to Use and Narrowly Focused

To begin, I think it is useful to frame the challenges that confront the federal government as it seeks to improve its management of water quality data. Although EPA has prime responsibility for the bulk of federal laws that pertain to water quality, nine other federal departments or independent agencies collect or manage water data. In addition, over 165 different federal programs—supported by at least 75 different federal data holdings—and numerous state water programs exist for water quality matters. Despite this proliferation of data, opportunities for greater data exchange and aggregation are often lost because data are incomplete, incompatible, or of questionable quality. Our recently released report on the Geological Survey's National Water Quality Assessment Program illustrates the formidable barriers—the absence of common data standards and definitions, uncertainties about quality assurance controls, and differences in sampling and analysis techniques—that government agencies face as they strive for greater efficiencies in using and sharing data across organizational lines.¹

Moreover, much of the data collected for water programs today are used to monitor facilities for point source pollution compliance and enforcement purposes under the Clean Water Act, such as specific chemical discharges from industrial and

¹ *National Water-Quality Assessment: Geological Survey Faces Formidable Data Management Challenges* (GAO/IMTEC-93-30, June 30, 1993).

sewage treatment plants. However, according to EPA, many of the nation's water quality problems are attributable to pollution from millions of diffuse or nonpoint sources. For example, rainfall (or snowmelt) moving over or through the ground picks up natural and manmade pollutants, including fertilizers, toxic chemicals from urban runoff (oil, grease) and abandoned mines (acid), and sediment from poorly managed construction sites, crops, and forest lands. Vital monitoring data, nonetheless, are often missing on both the scope and the impact of nonpoint source pollution and on the effectiveness of potential solutions. As noted in our past work, without this data, public officials have had difficulty reallocating resources to deal with the most serious nonpoint source problems.²

EPA and Congress, as evidenced by provisions in pending legislation amending the Clean Water Act, are outlining actions that would move the agency towards a watershed management and pollution prevention approach to improve water quality.³ As you know, this proposed shift would focus resources on identifying the primary threats to human and ecosystem health within a watershed as a whole, in addition to pollution treatment and disposal through point source monitoring and discharge permitting controls. EPA believes that examining both the point and nonpoint sources within a watershed collectively will allow comprehensive assessments of a full range of water quality factors—chemical, physical, biological—needed to target risks and priorities more effectively. However, collecting, analyzing, and reporting on water quality problems in such a comprehensive, integrated fashion is a daunting task, given the many federal, state, and local agencies that share responsibility for amassing nonpoint pollution information.

Let me amplify on these issues by first turning to water quality data problems related to EPA's current responsibilities under the Clean Water Act, as well as the agency's plans for improvements that are applicable to the Subcommittee's interest in performance-based assessments of water quality improvements.

Potential Solutions for EPA's Water Data Problems Are Being Examined

Previously, we have reported on problems with EPA's discharge permit and nonpoint source pollution data and EPA has also acknowledged many problems with its 305(b) information—status reports submitted by the states on their water quality monitoring programs.⁴ Besides the use of different monitoring approaches and assessment methodologies, longstanding data problems include inconsistent definitions, unknown or nonexistent quality assurance controls, and incomplete information about data collection procedures and sampling sites. As a result, it is difficult for EPA to combine data to provide a consolidated picture of national water quality improvements, both spatially and temporally.

EPA has several activities underway to address these problems. The Office of Water's 305(b) Consistency Workgroup has constructed new guidelines to expand states' knowledge and use of data to make evaluations of biological conditions of waterbodies and to improve the consistency among state reported information. EPA expects these guidelines and clarifications to be incorporated into the 1994 state reporting cycle, with additional changes likely to follow in 1996. EPA program officials also indicated that they are making progress in developing guidance for criteria to be used in monitoring, evaluating, and reporting nonpoint source pollution for rivers.

Further changes in identifying and collecting data are being considered as part of a strategic planning exercise within the Office of Water to reexamine and redefine goals expected to be supported by performance-based assessments of water quality changes. Working with other EPA and federal offices and state water agencies, the Office is considering four broad goals covering all of EPA's major water quality responsibilities: (1) protect and enhance public health; (2) conserve and enhance eco-

² *Water Pollution: EPA Budget Needs to Place Greater Emphasis on Controlling Nonpoint Source Pollution* (GAO/T-RCED-92-46, Apr. 7, 1992).

³ A watershed is a hydrologically defined drainage basin that includes not only the water resource—stream, river, lake, estuary, or aquifer—but also all the land from which water drains into that resource.

⁴ *Water Pollution: Greater EPA Leadership Needed to Reduce Nonpoint Source Pollution* (GAO/RCED-91-10, Oct. 15, 1990); *Water Pollution: EPA Budget Needs To Place Greater Emphasis on Controlling Nonpoint Source Pollution* (GAO/T-RCED-92-46, Apr. 7, 1992); *Water Pollution Monitoring: EPA's Permit Compliance System Could Be Used More Effectively* (GAO/IMTEC-92-58BR, June 22, 1992); *National Water Quality Inventory: 1990 Report to Congress*, United States Environmental Protection Agency, Office of Water, Apr. 1992.

systems; (3) improve ambient water systems⁵; and (4) reduce pollutant loads (toxic and conventional). The Office of Water is working to establish measurable, performance based subgoals based on quantifiable administrative and environmental indicators.

These efforts are constructive steps and complement congressional and executive branch interest in establishing performance goals, indicators, and measurements for federal programs. However, reaching consensus among EPA, other federal agencies, and the states on (1) targets for outcome performance that can be measured, and (2) performance indicators to measure progress is a formidable task that will require significant coordination and leadership from EPA. Office of Water officials have stated that severe limitations on staff and resources have restricted EPA's efforts to develop better techniques for monitoring nonpoint source pollution, help states develop water quality standards, and perform other critical functions identified as part of its Clean Water Act responsibilities. Still, EPA's water quality budget priorities have been consistently and heavily oriented towards point source problems and the Office of Water has not identified the program costs associated with its more comprehensive water quality approach.

EPA Plans to Improve Information Systems

As you know, the Office of Water maintains some of the largest and most important national water-related databases, containing millions of monitoring and compliance observations used by EPA, other federal and state agencies, researchers, public interest groups, and private citizens. Improvements are being planned for four key databases: (1) Storage and Retrieval of U.S. Waterways Parametric Data (STORET)—EPA's largest single repository for water quality sampling and monitoring data; (2) Ocean Data Evaluation System (ODES)—a system containing monitoring data on facilities discharging into marine waters; (3) Biological Information System (BIOS)—a subsystem of STORET containing data on aquatic organisms; and (4) Permit Compliance System (PCS)—the primary system used to track discharge compliance of regulated facilities.

In an effort to improve users' access and data-sharing with other EPA systems, the Office of Water is redesigning the STORET, BIOS, and ODES databases. Enhancements are also planned for PCS on an annual basis to address users' concerns, such as improved database query capabilities. The approach for improving STORET, BIOS, and ODES is not targeted at meeting broader management goals being developed by the Office of Water; instead, heavy emphasis is being placed on better supporting users' existing practices. As a result, the Office of Water may have an improved method for storing data, better user access, and larger capacity for storing water quality data, but the systems will not necessarily respond to the broader management goals currently under development. At the conclusion of our work, EPA officials stated they would begin addressing the broader goals in their redesign efforts.

Resources Not Yet Estimated for Use of Remote Sensing Technologies

EPA's watershed and pollution prevention approach needs comprehensive data consolidated from many sources to pinpoint water quality changes and their probable causes. Accordingly, you asked us to determine how EPA was using remote sensing technologies for water quality purposes, particularly satellite imagery and aerial photography, and factors affecting their greater usage. In pursuing this matter, we held discussions with officials from the U.S. Geological Survey because of their responsibilities and established, well-recognized expertise in water quality assessments and land mapping. We also talked with an official from the Office of Technology Assessment who is leading a series of comprehensive assessments of the civilian use of satellites across the federal government.

According to EPA officials, the agency uses data from remote sensing technologies for several important applications related to its water quality mission. These include (1) mapping and analysis of land uses that impact water quality, such as agriculture, forestry, and mining; (2) assessments of the physical habitat of aquatic species; and (3) detection of pollutant and thermal releases to waterbodies to assist in water pollution enforcement activities. In addition, U.S. Geological Survey officials said they used remote sensing data for planning of water quality surveys. EPA officials noted that several important benefits accrue from the use of remote sensing

⁵ Ambient water quality refers to the general prevailing physical, chemical, and biological characteristics of water in a given waterbody. Ambient water quality conditions may or may not include effluents—treated or untreated waste material discharged into the environment from sources such as wastewater treatment plants, industrial complexes, or landfills.

technologies, including more complete and timely understanding of land-use changes and their impacts on watersheds, reduced litigation costs because of photographic evidence of noncompliance, and safer inspection of toxic accidents and spills. However, remote sensing cannot be used as a substitute for the direct, labor-intensive collection and analysis of water samples. For example, remote sensing technologies cannot measure the quantity or concentration of chemical pollutants in water bodies. Also, coverage provided by the principal U.S. land resource satellite with the best resolution capabilities (LANDSAT) is so infrequent—once every 16 days—that many short-lived pollution run-off events that follow rainstorms are missed.

Despite these drawbacks, aerial photography and satellite imagery could complement other data gathering techniques and provide important information on land use changes and landscape characteristics affecting watersheds. However, the Office of Water has not yet developed specific plans or estimated resources for using these technologies to support its watershed approach.

Interagency Task Force Is Examining Governmentwide Water Quality Data Improvements

Because water quality data problems transcend agency jurisdictions and responsibilities, the Intergovernmental Task Force on Monitoring Water Quality (ITFM) has been established to develop an integrated, voluntary, nationwide strategy for ambient water quality monitoring. This strategy is expected to provide an organized process for water-quality monitoring that can meet the objectives of various monitoring activities, better integrate existing monitoring efforts, make more efficient use of available resources, distribute information more effectively, and provide comparable data and consistent reporting of water quality status and trends. Membership includes more than 90 representatives from 10 federal agencies, 8 state agencies, one interstate organization, and one Indian nation, with a representative from EPA's Office of Water serving as the Chairperson. The ITFM expects to submit a final report to the Office of Management and Budget in December 1994 outlining recommendations for strengthening coordination of a wide range of water quality activities, including improvements in monitoring data used for decision-making and program evaluations.

Several working groups from the task force are focusing on data collection and management problems and expect to make recommendations on data standards, common definitions, and metadata requirements.⁶ Decision papers on many of these topics are expected to be circulated for review by September 1993. These activities, while still in working stages, show promise for identifying and planning measures to address governmentwide improvements to water quality monitoring, data collection, and information sharing. However, the federal and state resources necessary to implement the suggested changes remain undefined, and developing and implementing a nationwide strategy is an enormous task and will require commitment and cooperation from all levels of government.

Concluding Remarks

In summary, EPA is confronted with formidable challenges in defining and achieving clean water goals that emphasize watershed management and pollution prevention approaches. Without adequate resources and funding, these approaches stand little chance of making progress in improving the nation's water quality. Successfully supporting these new approaches requires (1) strategically reexamining the capabilities needed from its information technology investments to support this new direction, (2) defining the requisite resources; and (3) securing interagency and intergovernmental cooperation.

That concludes my statement, Mr. Chairman. I would be happy to answer any questions that you or other members of the Subcommittee may have about our work.

⁶ Metadata describe such things as how the data were collected, what limitations exist, and how the data are stored and can be retrieved.

TESTIMONY OF HEDIA ADELSMAN, WATER RESOURCES PROGRAM
MANAGER, WASHINGTON DEPARTMENT OF ECOLOGY

INTRODUCTION

Good morning. I am Hedia Adelsman, Water Resources Program Manager of the Washington Department of Ecology. I am also a member of the Western States Water Council (WSWC). I have been asked to testify today on behalf of Governor Mike Lowry, who is a member of the Western Governors' Association (WGA). WGA and WSWC work together to provide leadership in developing regional solutions for water issues in 18 western states, and I have been involved in most of their water-related activities. I am pleased to represent Washington, WGA, and WSWC in testifying on Section 602 of S. 1114—STATE CERTIFICATION. Copies of WGA and WSWC positions are attached.

Like several other states, Washington has significant hydropower development. We also have an extensive and sophisticated water resource management program which is used to govern all water uses and related matters. We believe that it is critical for the states to exercise appropriate jurisdiction with respect to all beneficial uses of water, including hydropower generation. While Section 401 applies to all activities requiring a federal license or permit, its application regarding hydropower projects has engendered the context for this proposed clarifying provision of S. 1114. For this reason, before I discuss the specific language of S. 1114, I will explain in some detail the licensing activities of the Federal Energy Regulatory Commission (FERC), as they have called into question the states' legitimate role in water resource management.

BACKGROUND—STATE/FEDERAL JURISDICTION AND HYDROPOWER LICENSING

No one seriously questions the need for the exercise of federal jurisdiction in the licensing of major hydropower projects. The Federal Power Act (FPA) establishes a strong federal role, but appears to define a significant state role as well. The act contains "savings" language that shows deference to state water law in harmony with Congress' longstanding efforts to assure that states control the appropriation, use and distribution of water. In the 1940s, when faced with a situation where the exercise of state law threatened the veto of a large hydropower project, the United States Supreme Court held, in a case referred to as *First Iowa*, that FERC's authority to license federal hydropower projects preempts conflicting state control under the FPA. Previous to this case, the Federal Power Commission had carried out its programs based on dual federal/state authority, where the Commission licensed electric generating facilities while the states issued related water rights. Understandably, following the decision, the Commission paid less attention to state authority to regulate water resources. However, the dearth of hydropower projects allowed hydro development to proceed with a relative lack of problems. States turned to informal methods of conflict resolution in most instances, and hydropower development under federal law and state water resource management coexisted, albeit somewhat uneasily.

In the late 1970s and early 1980s, federal energy statutes prompted a significant increase in hydropower permit applications, which magnified controversies caused by FERC's unwillingness to defer to water use decisions made by state agencies. These state agencies not only manage and allocate water rights, but also conduct water planning, protect the public interest in water use, certify compliance with state and federal water quality laws, verify the structural safety of dams, and carry out other related functions. Eventually, controversy between FERC and the states over some of these functions led the Supreme Court to review a case that offered an opportunity to revisit the *First Iowa* holding.

In the *Rock Creek* case, California imposed requirements on a hydropower project to protect a downstream fishery. These bypass flows were more stringent than FERC's proposed requirements. The Supreme Court found that the case presented a close question, but upheld its earlier *First Iowa* interpretation. The Court concluded that it was better to have the matter of federal/state jurisdiction under the FPA settled than to have it settled right. The decision disrupted California's comprehensive water management system and displaced its authority to balance competing water uses.

FERC's position of exclusive jurisdiction has caused other significant problems. These difficulties have dealt with the imposition of instream flows by FERC and FERC's refusal to recognize such flows when established by states, the subordination of water rights for hydro development to other water uses, FERC's failure to

recognize state water planning decisions, and FERC's efforts to subvert the state water quality certification process, among other things.

One such example of a specific licensing decision by FERC that demonstrates the need for joint FERC/state jurisdiction over hydrolicensing occurred in the state of Idaho in June 1992. Idaho had determined that protection of the stream environment in the Falls River in the eastern part of the state was necessary to preserve outstanding fish and wildlife, recreation, geologic and aesthetic values. The state contended that FERC should not license a hydroproject on a protected stream. After FERC licensed the Marysville project on the river a penstock failure caused tens of thousands of tons of sediment to wash into what Idaho Governor Cecil Andrus called "one of the premier fishing streams of the nation." Governor Andrus said, "It is my belief that the cause of the failure was due, in large part, to FERC's remoteness and lack of oversight and supervision of construction activities of the licensee. . . ." He concluded, "FERC's actions in this matter have done little to impress me that it is qualified to assure protection of public values. To the contrary, not only was the setting of bypass flow conditions and failure to give due recognition to existing water rights and state water quality standards a comedy of errors, but now we have an ecological disaster on our hands." This disaster is in the process of being cleaned up.

OVERVIEW OF CLEAN WATER ACT SECTION 401.

Another area of dispute has been the certification of hydropower projects under Clean Water Act (CWA) Section 401. The states have viewed the certification procedure as an appropriate recognition of state jurisdiction over water resources, a view which they are convinced is consistent with congressional intent. FERC, and most of the hydropower industry, have taken a much narrower view of the state role. I am here today to describe why a simple clarifying amendment like Section 602 of S. 1114 is warranted.

CWA Section 401 authorizes states to deny certification of a federally permitted or licensed activity if the activity would result in violation of state water quality programs. In the alternative, a state is allowed to certify that an activity, such as a hydropower project, may be carried out in harmony with state programs, provided certain conditions are met. The breadth of state certification is based on "the applicable provisions of [CWA] Sections 301, 302, 303, 306, and 307 . . ." The heart of the certification is determined by Section 303, which deals with state water quality standards.

Application of the state certification process has proven difficult over time. While there is some agreement that the states should have an important role under Section 401, FERC and its hydro-applicants contend that a state must act based on narrow, chemical water-quality parameters. They also contend that state determinations should be made quickly, on a "thumbs-up or thumbs-down" basis.

Challenges to the scope of state review have led to court battles. While some decisions have held against an expansive state role under CWA Section 401, others have held in favor of the states. For example, a recent decision from the state of Washington Supreme Court, as I will explain, correctly held that the breadth of state certification under Section 401 should not be limited only to chemical parameters. Rather, the court found that the Washington Department of Ecology could condition its certification of a hydropower project on maintenance of an instream flow in a portion of the river that would be affected by the project. This instream flow requirement was found to be a proper condition in the water quality certification. In other words, a water quantity-based condition was allowed as part of the Section 401 water quality certification.

S. 1114 Section 602 would clarify that the result in the Washington case is appropriate in other states, by allowing states to certify whether an activity complies with state water quality standards and provides for the protection, attainment, and maintenance of designated uses included in the standards. Such certification generally requires a more complex approach than a simple determination of whether the chemical parameters of a state's water quality standards would be violated. States maintain that they already have the authority to make this type of certification under Section 401 as it is currently written. Nevertheless, in light of conflicting court decisions, the amendment contained in S. 1114 Section 602 would settle this area of conflict by clarifying congressional intent that states should act in partnership with FERC to protect the quality of the nation's water and related values and uses. Given the states' history in dealing with FERC on hydropower licensing, this clarification should be made by Congress.

WASHINGTON EXPERIENCE

Specifically, the Washington Supreme Court held that the FPA does not preempt the Washington Department of Ecology from including minimum streamflow conditions in a CWA Section 401 certificate issued in conjunction with a hydropower project licensed by FERC. In that case, the City of Tacoma and the Jefferson County Public Utility District No. 1 planned to build a hydroelectric facility on the Dosewallips River. The applicants were required to obtain a Section 401 certification, which was granted but conditioned upon maintenance of a minimum streamflow in an affected portion of the river. The applicants argued that federal law preempted the state from establishing the streamflow requirement, and that in any event my department was outside its authority because its suggested streamflow was calculated to enhance, rather than preserve, the fishery.

The court found that the CWA authorized Washington to include baseflow requirements in the Section 401 certificate to ensure compliance with state water quality standards. The applicant argued that the standards, and therefore the scope of the Section 401 certification, should be limited to control of pollution discharge, and could not include streamflow levels. We maintained that the Section 401 certification was an appropriate method of carrying out a provision of state law which provides that "perennial rivers and streams...shall be retained with baseflow necessary to provide for preservation of wildlife, fish, scenic, aesthetic, and other environmental values. . . ." The court agreed that the streamflow conditions were necessary to assure compliance with state law, as envisioned under CWA. The court said, "The Section 401 . . . certificate may include conditions to enforce all state water quality-related statutes and rules. . . . Inasmuch as issues regarding water quality are not separable from issues regarding water quantity and base flows, we . . . hold that [Washington law on base flows] qualifies as an 'appropriate requirement of state law for purposes of [CWA] Section 401.'"

The court considered the contention that the FPA preempted the state's action. The FERC applicants relied on the U.S. Supreme Court's line of decisions beginning with *First Iowa* and ending with *Rock Creek*. The Washington Supreme Court distinguished these cases, noting that they dealt with the scope of powers saved for states under FPA Section 27, whereas in issuing a CWA Section 401 certificate Ecology derived its authority to act directly from provisions of federal law. The court noted that CWA Section 401 "completely alters the legal context and renders untenable [the applicant's] preemption argument." The court continued, "When the FPA and the [CWA] are considered together, the comprehensive scheme that emerges is one in which Congress left room for the state to supplement the FPA through the [CWA] Section 401 certification process." "Simply put," the court said, "Federal preemption . . . does not apply . . . where a state is acting to fulfill its federally mandated role." This ruling is consistent with the Department of Ecology's application of the law, an application which has proved successful. Several streams in the state, some which had been dewatered for up to 50 years and from which salmon populations had disappeared, now have water in them because of state imposed bypass flow requirements. This enhanced fish habitat, especially the creation of spawning areas, has allowed anadromous fish populations to return. The presence of salmon in previously dry streams is consistent with current major efforts in the Northwest to restore aquatic habitat and prevent further listings of endangered species.

COMMENTS ON OPPOSITION TO S. 1114 SECTION 602

Opponents to Section 602 of S. 1114 may argue that it is unsound because federal preemption is necessary in hydropower licensing so that FERC can balance, as a single agency, the many conflicting public uses involved with hydropower production. When examined in the context of western water law and management, however, this argument, rather than calling for fair treatment, calls for special treatment for energy production uses only. States have carried out the primary role in water resource management in the West since the region was settled. Congress has repeatedly deferred to state authority in this regard. As federal interests have increased, it is quite common for state water rights applicants to also be required to obtain various federal permits to exercise their water rights. This system of dual jurisdiction enables both federal and state governments to protect their legitimate interests. It represents a system that functioned well with hydropower licensing before the *First Iowa* decision was handed down. Even today, in most instances, hydropower applicants come forward to obtain state water right permits because they understand the protection that those permits provide under state law. Opponents of dual jurisdiction seem unable to present evidence that such a system is unworkable, or inimical to the public interests.

To argue that states should now have a very limited role, under Section 401 of the CWA, is to say the state has virtually no legitimate interest in this area. Far from being the case, this argument simply overlooks the ability of state water management efforts to balance the conflicting goals of protecting both private rights and the public interest for the greater good. Given the closeness of state regulators to the issues and watercourses involved, and the fact that water uses are interdependent because each use affects the quality and quantity of water available for other uses, states are ideally situated to exercise significant and broad authority to assure that hydropower projects comply with state water quality programs.

Opponents may also argue that Section 602 of S. 1114 is unnecessary because state interests are protected under FPA Section 10(a), which gives FERC the responsibility to balance many public uses by ensuring that licenses are best adapted to a comprehensive plan for the affected waterway. Also, they may assert that, under the Electric Consumers' Protection Act (ECPA), FERC must determine whether a project is consistent with state comprehensive water planning. The difficulty with these assertions is that FERC does no comprehensive planning and is not equipped to adequately consider or protect all competing water uses and interests. FERC has failed to give the type of deference to state water planning that was envisioned when ECPA was passed. It considers state comprehensive water plans in licensing, but does so only on an equal basis with many other documents submitted for the record in hydropower licensing cases. Thus, neither FERC's "comprehensive planning" responsibility nor the ECPA amendments are adequate substitutes for compliance with state water allocation or quality certification procedures.

In reality, FERC does not have at its disposal, nor can it develop and review, the extensive state water rights records, hydrologic and water quality-related data, and other information necessary to make informed decisions regarding water quality and water needs and uses in a state. Such information can only be available to FERC if every affected water right holder files a protest in a FERC proceeding. The FERC licensing process is clearly not structured to accommodate the thousands of parties that would have to participate in such a proceeding.

As to the argument that FERC is a necessary arbiter in dealing with possible interstate conflicts, such conflicts are relatively rare. The great majority of hydrolicensing decisions affect local interests and cause or have the potential to cause conflicts that can be resolved through compliance with state water management procedures. Where interstate problems arise with respect to large projects, they can be settled through proceedings similar to equitable apportionment or interstate compacts, which are understood well by western water officials, but not by FERC.

CONCLUSION

Policy statements of WGA and WSWC recommend that legislation reauthorizing the CWA include an amendment to Section 401 to ensure that any federally licensed activity resulting in an alteration or hydrological modification of surface waters be preceded by Section 401 certification that assures compliance with all provisions of state law. Section 602 of S. 1114, as a clarifying amendment to current Section 401 language, would essentially accomplish this result, and therefore is supported by WGA, WSWC, and the state of Washington. Under it states would retain primary jurisdiction over water quantity issues and, under the CWA, jurisdiction over the integration of water quantity and quality considerations through the Section 401 certification process. The CWA and FPA should work together to encourage cooperation, rather than confrontation, in the process. A balanced and cooperative approach is needed.

The western states recognize the linkage between water quantity and water quality and the fundamental role these considerations play in effective and comprehensive water management. As Senators Baucus and Chafee have rightly recognized in the provisions of this bill which address state-based watershed planning, a more holistic means of managing our nation's water resources is necessary. States, by virtue of their primacy over water resources and their extensive experience with, data on, and understanding of the existing rights and public values associated with their water resources, have rightly taken the lead in this area. The clarification of Section 401 included in S. 1114 is fundamental to the success of any comprehensive water management effort, including the state-based watershed planning program included in this bill. Without the assurance provided by Section 401 that states will have a role in assuring federal compliance with all provisions of state law, there is no means of ensuring that watershed planning efforts, as well as other state water quality and quantity management activities, are recognized and not disrupted arbitrarily. We support this amendment and urge that it be enacted as part of the CWA reauthorizing legislation.

Western Governors' Association

Resolution 93-009

SPONSOR: Governor Andrus

SUBJECT: Reauthorization of the Clean Water Act—Section 401

A. BACKGROUND

1. Clean water is essential to the health and quality of life of the citizens in the arid western United States. Since water is a scarce and precious resource in the West, any alteration, modification or degradation of water quality must be managed with a full understanding of local social, environmental and economic interests.
2. Over the past twenty years it has become evident that water quantity issues—specifically water resource allocation and the determination of beneficial uses are intricately related to the maintenance of water quality, specifically the protection of beneficial uses.
3. Western states have developed a high level of expertise in integrating water quality criteria with their longstanding authority in allocating water resource through legislative action, planning strategies, and regulations to ensure protection of water quality while promoting water conservation and reuse.
4. Hydrological modification and alteration of western waters by federally licensed hydroelectric projects often result in water quality degradation, since under the Federal Power Act decisions integrating water quantity and water quality are often made by bureaucrats in Washington, D.C. that are unfamiliar with, and insensitive to local environmental and economic interests.
5. Reauthorization of the Clean Water Act is now being considered in Congress. The experience of western states in managing programs under the Clean Water Act is that the Act needs to be expanded to ensure that the states and not the federal government make crucial decisions on integrating water quantity and water quality in the context of federal licensing actions.
6. Presently under Section 401 of the Clean Water Act, the states have explicit authority to issue or deny water quality certification for federally licensed activities that result in discharge of pollutants to state waters. In order to ensure that the integration of water quantity and water quality issues occur at the state level, it is necessary to expand Section 401 of the Act to include water quality certification for hydrological modification and alteration of state waters.

B. GOVERNORS' POLICY STATEMENT

1. The states should retain primary jurisdiction over both water quantity and water quality issues through the water quality certification process set forth under Section 401 of the Clean Water Act. The Clean Water Act reauthorization should include an amendment to Section 401 that would ensure that any federally licensed activity that results in an alteration or hydrological modification of surface waters must be preceded by a Section 401 certification that ensures state authority to determine the integration of water quantity and water quality issues.

C. GOVERNORS' MANAGEMENT DIRECTIVE

1. WGA staff is directed to transmit this resolution to the appropriate committees of Congress, the President, the Administrator of the Environmental Protection Agency, and the western congressional delegation.
2. WGA is to monitor this legislation and implementing regulations and to work with the appropriate public policy organizations in support of the governors' policies.

POSITION OF THE WESTERN STATES WATER COUNCIL

BACKGROUND

Clean water is essential to the quality of life and health of the citizens of the nation. This is particularly true in the arid West, where water is a scarce and precious resource that must be managed considering all social, environmental, and economic values and needs. Because of their unique understanding of these needs, states are best able to manage the water within their borders. Much progress has occurred under the Clean Water Act (CWA) toward the goal of controlling water pollution. Western states have made great strides in integrating water quality and water quantity decision-making and have developed legislative and planning strate-

gies for promoting these goals as well as promoting water conservation and water reuse.

The CWA is now being considered in Congress for reauthorization. The outcome of the debate will affect the ability of state, federal, local, and tribal governments to protect water quality, and could affect the ability of state governments to administer water rights. The Western States Water Council encourages the reauthorization of the CWA based upon the following principles. As issues become more clearly defined, the council will provide further comments in future position statements.

CROSSCUTTING ISSUES

There are two issues of importance, pollution prevention and watershed management, which deserve special consideration during the CWA reauthorization process, because they potentially impact all programs authorized by the CWA.

POLLUTION PREVENTION

Pollution prevention has recently received a great deal of attention, but needs to be given more emphasis. The concept of pollution prevention cuts across all CWA programs by offering a means of avoiding complex and costly "command and control" approaches to water pollution control and clean up. Expanded funding should be provided to states for development of pollution prevention programs, and incentives such as greater flexibility in using existing grants should be provided to states with strong pollution prevention programs.

WATERSHED MANAGEMENT

The watershed approach offers great opportunities. It allows focus on the most critical problems that affect the watershed while eliminating duplication and inconsistency between regulatory entities. It allows public involvement to be focused on a defined area where results can be measured. It has the potential to foster cooperative problem solving where the important players can help each other solve mutual problems in a way that can result in an improved environment at less cost. It provides a feasible means of developing an "ecosystem approach" relative to the protection of water quality and related values. To encourage these benefits the CWA should embody the following principles:

1. States should be encouraged, but not mandated, to utilize a watershed approach for water quality and resources management.
2. Any absolute mandate contained in the CWA should be limited to water quality concerns.
3. While states should be allowed to craft their watershed management to meet their needs, the goals and the scope of such programs must be clearly defined. This definition is essential since "watershed management" has many different meanings to different people. In general, basin-specific goals and programs should be selected and prioritized on the basis of risk to quality-of-life, human health, and ecological concerns.
4. Watershed management should emphasize performance, not planning. A uniform set of best management practices should not be mandated. States should be allowed to identify appropriate individual strategies to be applied within, and for, a given basin.
5. There should be no interference with the rights of the states to manage allocation of their water supplies.
6. The internal structure of state government should not be mandated. States should be allowed to use existing authorities and programs or set up advisory committees and watershed councils to meet their needs as they understand them.
7. Flexibility should be provided in both the procedural and substantive requirements of clean water programs to meet the goals of improving water quality and the environment as soon as possible.
8. EPA should provide technical, financial, and research assistance. It should not mandate any particular approach or try to mandate its preferred methods.
9. Federal funding should be made available to the states to support watershed management. The funding should not be tied to following processes specified by EPA. There should be sufficient flexibility in funding to allow states to deal with watershed problems according to the priorities they have identified.

FUNDING

1. The minimum funding at the national level for the state revolving fund (SRF) should be \$2.4 billion annually for at least five additional years beyond the current authorization to meet the original funding commitment of the CWA. Funding levels must be restored in response to changes from the "stimulus package" which caused

a reduction of funding to unacceptable levels. This funding is also needed to provide adequate assistance for new needs created by the 1987 reauthorization, such as controls on non-point source pollution, stormwater, and toxics. Adequate funding should also be provided to meet the water quality needs of small communities and rural areas. A grant program or combination loan/grant program with loan terms greater than 20 years should be implemented through new funding and/or in a manner that does not deplete SRF assets.

2. CWA Section 106 funding should be increased to a level that enables states to maintain effective water quality planning, ambient monitoring, permitting, and compliance. Funds available to states under CWA Sections 104, 319, and any new funding for pollution prevention and watershed management should be combined into Section 106, and a single grant should be awarded to each state. States should then have flexibility in targeting the expenditure of funds.

3. For any new federally mandated programs, new federal funds should be provided. The Council opposes any increased matching requirements for federal funds.

4. In providing SRF financial assistance to municipalities, federal requirements other than those specified by CWA Title VI should not be imposed. Once federal capitalization of the program ceases, EPA oversight should be limited to ensuring that the SRF is maintained. Federal crosscutting laws associated with the SRF program should be eliminated. Costs associated with the purchase of land, easements, and rights of way should be eligible for SRF funding.

5. The 4% limitation on SRF administrative costs should be based upon the authorized level rather than the appropriated capitalization grant amount, and provisions should be made for a minimum amount of federal assistance per state for administrative costs.

6. Separate funding and administrative requirements should be provided for any drinking water state revolving fund program. Money allocated for the drinking water fund should be from a source separate from the wastewater SRF.

7. Alternatives to typical "command and control" programs can be promoted through creative funding incentives. The elimination of "cross-cutter" requirements for states with 90% of point sources meeting secondary treatment or for states with no or minimal National Pollution Discharge Elimination System (NPDES) permit backlogs are two examples.

NON-POINT SOURCE POLLUTION CONTROL

1. Maximum flexibility should be provided to states to effectively implement non-point source (NPS) pollution control programs. NPS funding should enable states to balance program elements and focus, as needed, on technology development and transfer, monitoring, assessment, demonstrations, local community technical assistance, and institutionalizing non-traditional water quality management programs.

2. NPS plans, demonstration projects, and program development as envisioned in the 1987 CWA amendments are not yet complete. To produce needed results, states must have the ability to use a significant portion of their CWA Section 319 funds to establish and maintain long term, consistent programs as envisioned by the 1987 amendments.

3. A provision should be added to the CWA to ensure that Section 319(k), requiring federal agency activities to comply with state NPS management plans, is implemented.

4. EPA should not define national, mandatory management practices to control agricultural runoff and other forms of NPS pollution. States, however, should be required to control such pollution where it causes violation of water quality standards. Both the management practices and the specific waters affected should be defined by the states. A voluntary approach should be acceptable if the states have authority to enforce mandatory requirements where water quality standards violations occur. The irrigation return flow exemption from the NPDES should not be rescinded.

5. Federal agencies should be required to develop incentives for implementing NPS controls on federal lands and for federally supported activities. For example, support payments could be increased to farmers with effective conservation plans and bonus acreage awarded to lumber companies with successfully implemented NPS plans.

WATER QUALITY STANDARDS

1. The states must have the primary role in establishing and interpreting water quality standards that meet the intent of the CWA. EPA should be required to provide necessary criteria development guidance to states in a clear and timely manner.

2. The CWA should clearly acknowledge that municipal stormwater systems are to implement best management practices to the maximum extent practicable with the goal of meeting water quality standards.

3. The various water quality assessment requirements should be integrated into a single, streamlined assessment under CWA Section 305(b). The assessment requirements should not be overly burdensome and the 305(b) assessment should be prepared every three to five years rather than every two years.

4. The states should continue to review and revise water quality standards on a triennial basis. EPA should continue to be responsible for approving adopted state water quality standards to assure interstate compatibility and compliance. However, the application of water quality standards in support of state water quality protection goals must continue to be the prerogative of the states.

5. States must be allowed to establish water quality standards flexible enough to account for natural variations in water quality and background levels.

6. Not all waters should be classified as fishable, swimmable. For example, the CWA should be amended to recognize the unique nature of constructed drains and canals and allow water quality standards to be set that recognize the benefits provided by these waterways (many of which would not exist without the agricultural activity) and the nature of agricultural operations and their ability to reduce pollutants from non-point sources. In such cases, protection of receiving waters for designated beneficial uses should be assured. Also, there are waters which historically, for natural reasons and causes, cannot meet fishable/swimmable criteria.

EFFLUENT DOMINATED WATERS/WATER REUSE

1. Natural channels are often needed to transport reclaimed water to an area of reuse. Reuse of wastewater is an increasingly important source of water in the West. Effluent dominated waters also support riparian habitat. In the CWA reauthorization, Congress should recognize the interrelationship of such waters and water quality standards, riparian habitat, and water rights issues, and should develop policies that support the objectives of state and federal law, by allowing establishment of appropriate water quality standards, based on intended uses, for natural conveyance systems and man-made waterways that discharge flows to waters of the United States.

2. A policy statement should be added to the CWA such as: It is the policy of Congress to allow states to encourage the reuse of treated wastewater, as a component of water quality control as well as comprehensive water management.

3. The CWA reauthorization should allow the permitting authority maximum flexibility in establishing requirements pertaining to effluent dominated waters and ephemeral and intermittent streams based upon net environmental benefit under applicable law. States should be encouraged to adopt water quality standards for reclamation projects to control toxicity, nutrients, and other water quality parameters to provide for reasonable protection of designated water uses. EPA should assist with research to establish safe effluent discharge parameter levels for human contact water uses.

FEDERAL/WESTERN STATE ISSUES

1. Water pollution control programs are administered most efficiently and effectively at the state level. Delegated state programs should be approved if they meet the goals, objectives, and intent of federal statutes. They should not be less stringent than, but need not be identical to, EPA regulations, policies, or procedures.

2. CWA Sections 510(2) and 101(g) are clear expressions of Congressional intent regarding deference to the states' role to allocate quantities of water. This fundamental principle of deference, which is manifest in many other federal environmental statutes, must not be weakened in the context of the CWA reauthorization.

3. Virtually all western states have in place mechanisms to establish and maintain instream flows. Statutory requirements in the CWA for maintenance of such flows would affect water rights and impact water management in the West. No such requirements, either explicit or implicit, should be included in the CWA.

4. Additional federal research and technical assistance are needed on the following topics important to western states: turbidity, suspended solids, physical integrity of the water body, biotic methods applicable to ephemeral and intermittent waters, definition and regulation of ephemeral and intermittent waters, federal land and facility compliance with state water quality standards, mining activities as they relate to storm water, and turbidity.

5. To maintain an appropriate federal/state partnership, it is essential that state officials have a meaningful voice in EPA policy development, particularly in the early stages of such development before irreversible momentum leads toward pre-

scriptive programs. State participation in EPA policy making should not be subject to the Federal Advisory Committee Act or the Administrative Procedures Act.

WETLANDS

1. The existing CWA Section 404 regulatory program must be improved. Sole authority for administration of the program should be vested in one agency. The program should encourage and enable states to assume full or partial permitting authority. Financial support should be provided to states that assume the federal program. The program should include research into and development of techniques to assess wetlands functions and values.

2. The continuing loss and degradation of the nation's wetlands base is unacceptable. A no-net-loss policy is an important step toward reversing that trend. Such a policy, however, must provide flexibility and be implemented at different rates and in different ways in various regions of the country to reflect regional wetlands needs, conditions, and types.

3. National wetlands policy should lend itself to implementation through state, regional, and local plans and programs, and recognize individual state and local planning and regulatory efforts to preserve and protect wetlands.

4. The diverse needs and types of wetlands nationwide, and concern for human and economic impacts, will make it difficult to achieve a no-net-loss goal. To achieve such a goal, a broad range of non-regulatory programs (such as subsidies and tax incentives, public acquisition, conservation easements and leases, and other non-punitive approaches) and regulatory programs will be required.

GROUND WATER

1. A national regulatory program for ground water would be inappropriate and should not be part of the CWA reauthorization. Ground water protection and management are primarily the responsibilities of state and local governments. Such governments must have the flexibility to develop and continue existing programs appropriate for their own circumstances, including strategies and mechanisms appropriate to assure ground water quality protection and preserve their ability to allocate, manage, and protect rights to use ground water.

2. The federal role in ground water management should be to provide technical assistance, gather data, and promote research to support state programs. Also, any federal funds that are provided for ground water protection should be made available to support all phases of program development and implementation of state ground water quality programs, not just program development.

3. Federal agencies should be required to conduct their activities in accordance with, and without duplication of, state and local ground water protection programs.

4. EPA's Comprehensive State Groundwater Protection Program strategy is an acceptable approach to ground water protection to the extent that it is carried out on a voluntary basis. This approach provides flexibility to address the most pressing ground water problems within a given ground water basin.

STORMWATER

1. Existing requirements for NPDES permits applicable to stormwater discharges are often unrealistic and may, to a large extent, be unachievable, especially in arid areas. The CWA should clarify previous congressional intent that municipal stormwater dischargers are to implement best management practices and should not necessarily be subject to end-of-pipe treatment standards. Best management practices shall be developed through public participation and be designed to ensure that control of stormwater discharge is consistent with regulatory implementation of mandated stream standards. State regulatory agencies are encouraged to establish additional monitoring and performance criteria to assure meeting goals of watershed management programs.

2. The statutory deadlines for implementation of the stormwater program should be revised to establish realistic deadlines for permit issuance and to accommodate phased implementation of stormwater regulatory programs.

3. Recognition should be made of the tremendous responsibility placed upon states by federal stormwater regulations. Significant additional federal resources should be made available to avoid major cuts in other programs.

4. Stormwater pollution controls may include small ephemeral ponds and injection wells as part of on-site retention requirements which could result in significant pollution of ground water. Impact of these requirements may adversely affect the overall water management process. States need the flexibility to design optimum water quality/water quantity interfaces.

ANTI-BACKSLIDING

1. The CWA should be revised to clarify the application of anti-backsliding. EPA's inaction on guidance or regulations regarding anti-backsliding has been detrimental to the permitting process, resulting in delaying permits or causing less-restrictive permits to be written.

2. The CWA should be amended to allow removal or modification of effluent limits in cases where the limit is determined to be unnecessary because of errors in calculation, publication of new scientifically valid information, or determination that the substance being limited is not present in the discharge.

CLEAN LAKES

1. CWA Section 314 funding should be increased to a level that recognizes the key role the Clean Lakes Program plays in managing the nation's lakes for maximum beneficial use and enjoyment.

2. Appropriations should be sufficient to support meaningful efforts to continue assessment and identification/implementation of methods and procedures to restore lake quality.

COMPLIANCE WITH STATE LAW UNDER CWA SECTION 401

States have primary jurisdiction over water quantity issues and should retain primary jurisdiction under the CWA over integration of water quantity and water quality considerations through the water quality certification process set forth under Section 401. The CWA reauthorization should include an amendment to Section 401 that would ensure that any federally licensed activity that results in an alteration or hydrological modification of surface waters must be preceded by a Section 401 certification that ensures compliance with all provisions of state law.

TRANS-BORDER AREAS

EPA needs the authority, responsibility and resources to deal with water quality issues in trans-border areas. Also, mechanisms should exist for better coordination and participation between EPA, the states, other agencies, and our neighboring nations.

WATER QUALITY CONTROLS ON TRIBAL LANDS

In order to prevent voids in regulation, state water quality standards should be effective on Indian lands until replacement standards have been adopted by tribal governments which have been designated as states, or promulgated by EPA.

TESTIMONY OF ROGER WOODWORTH, PRESIDENT, NATIONAL HYDROPOWER ASSOCIATION, WASHINGTON, DC

My name is Roger Woodworth. I am Strategic Counsel to the President of the Washington Waterpower Company, an investor-owned utility serving 260,000 electric customers with facilities in the states of Washington, Idaho and Montana, and I am pleased to appear before you today in my capacity as President of the National Hydropower Association ("NHA"). NHA is a non-profit organization founded in 1983 to be a national voice for the hydropower community in maintaining the viability of hydropower technology as a low-cost, clean, reliable and safe source of renewable energy. NHA's members represent the broad spectrum of the hydropower industry, including project owners and operators—public utilities, investor-owned utilities, cooperatives, municipalities and independent power producers—as well as equipment manufacturers, engineers, and legal and consulting firms from all regions of the United States. The hydropower industry serves over 40,000,000 customers in 41 states. Most of these customers are residential customers; thus, approximately 100,000,000 Americans benefit directly from hydropower generated electricity. At the outset, I should also note that this testimony has been prepared in consultation with and endorsed by the Northwest Hydroelectric Association.

NHA is pleased to have this opportunity to present our views on the reauthorization of the Clean Water Act ("CWA"), 33 U.S.C. § 1251 *et seq.*, as proposed in S. 1114, the Water Pollution Prevention and Control Act of 1993. NHA commends the subcommittee for holding this hearing today to focus on the critical water quality certification process under Section 401 of the CWA, 33 U.S.C. § 1341.

As advocates of hydroelectric power generation, the members of NHA strongly believe in the protection of clean water and support reauthorization of the CWA. The CWA, as currently implemented in conjunction with the Federal Power Act ("FPA"), 16 U.S.C. § 791 *et seq.*, maintains a sound balance between environmental

concerns and energy policies at both the state and federal levels. NHA submits that any reauthorization of the CWA must continue to protect that existing balance.

DESCRIPTION OF THE HYDROPOWER INDUSTRY

The hydropower industry is committed to the production of energy for the Nation in a manner consistent with the stated goals of the CWA "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Construction and operation of hydropower projects can have adverse impacts on the environment, but effects on water quality tend to be minor and readily controlled. Although the water that hydropower projects use to spin turbines to generate electricity is returned to the waterway without added chemicals or other wastes, water quality impacts (water temperature and dissolved oxygen) may result from water storage and the regulated release of flows. Fortunately, techniques are generally available to control these problems and assure the maintenance of water quality consistent with state standards under Section 401 of the CWA. As the United States Environmental Protection Agency ("USEPA") has acknowledged, hydropower projects can, in some instances, enhance water quality through the regulation of reservoirs and downstream water flows. *U.S. Envtl. Protection Agency, Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters* (Jan. 1993).

Moreover, hydropower has a wide variety of environmental and other benefits for our Nation. Our projects utilize an endlessly replaceable inflation-free fuel—falling water supplied by rain and snow. Air quality is maintained through this emission-free generating technology. In fact, hydropower resources have the potential to provide a greater portion of the Nation's electric power needs without any additional emissions of carbon. Assuming appropriate measures are available to address other environmental concerns, the development of additional hydropower resources from existing projects and non-power dams could offset carbon emissions by six (6) million metric tons per year by the year 2000.

Hydropower facilities constitute nearly twelve percent (12%) of the Nation's total energy capacity, representing 85% of all renewable energy generation. This critical portion of our energy supply is frequently provided in multi-purpose projects that provide additional benefits by serving a wide array of public needs, including, among others, irrigation, flood control, navigation, municipal and industrial water-supply, fisheries improvement, and recreation. Not surprisingly, this clean and environmentally sound source of generation is preferred by American consumers by a two (2) to one (1) margin.

As an active participant in the use and enjoyment of the Nation's waterways, NHA applauds the general approach adopted in S. 1114 for maintaining the ecological integrity of our Nation's waterways and surrounding watersheds. This comprehensive approach to protecting water quality is in keeping with the lessons learned by the hydropower industry and others in our years of stewardship over these important national resources. NHA is concerned, however, that proposals to license and construct new hydropower projects and proposals to relicense existing hydropower projects will be subject to duplicative and conflicting regulation. The holistic approach of S. 1114 must be expanded to account for the integration of equally vital national interests represented by the comprehensive authority that Congress has granted federal agencies in other federal statutes—most particularly for our industry, the FPA.

SECTION 401 WATER QUALITY CERTIFICATION

Although hydropower introduces no pollutants into our waterways, the operation of our federally licensed projects in waterways has been deemed by the Federal Energy Regulatory Commission ("FERC") and the courts to be subject to federal water pollution control, primarily through the Section 401 water quality certification process. Indeed, the CWA provides that "[n]o license or permit shall be granted until the certification required by (Section 401) has been obtained or has been waived." 33 U.S.C. § 1341(a)(1). Thus, certification from a state water quality agency of compliance with state water quality standards is a precondition to obtaining a license under the FPA and the water quality certification review serves to supplement the comprehensive review of any proposed new or existing project conducted by FERC under the National Environmental Policy Act ("NEPA"), 42 U.S.C. § 4321 *et seq.*, and the comprehensive development standards of the FPA. Early in the licensing process, the state water quality agency stipulates what conditions will be included in any license issued to protect water quality.

In rendering a licensing decision, FERC must consider all beneficial public uses of a waterway, including, among others, energy conservation, navigation, irrigation,

flood control, water quality, use and supply, fish and wildlife protection, recreational opportunities and other aspects of environmental quality as well as power needs. See 16 U.S.C. § 803(a)(1). As recently as 1986, Congress—after requiring enhanced consideration of state and federal resource agency recommendation—reaffirmed FERC's role as the final arbiter of what constitutes comprehensive development of a waterway in connection with hydropower projects under FERC's jurisdiction. See *Electric Consumers Protection Act*, Pub. L. No. 99-495, 100 Stat. 1243 (1986). State water quality certification stands as an exception to the comprehensive review of all factors affecting the public interest in hydropower development that Congress has entrusted to FERC.

Inasmuch as the heart of the licensing decision under the FPA revolves around the various and often competing uses of a stream, Section 401 needs to be carefully defined, interpreted, and applied to avoid seriously disrupting this comprehensive assessment of the broad public interest mandated by Congress in the FPA. State certification under Section 401 that stipulates the conditions to maintain and protect water quality, a role the current text of Section 401 fully authorizes, provides important input to the process, but does not significantly intrude on the broad judgment balancing the uses of the waterway that is required under, the FPA. When properly conducted to assure compliance with numeric and narrative water quality criteria, this state function is rigorous but focused and provides a proper preliminary qualification from which the broader issues of competing federal, state and other public uses can proceed.

Section 602 of S. 1114 proposes an expansion of Section 401 certification authority beyond maintenance of water quality standards to include authority to "allow for the protection, attainment, and maintenance of designated uses included in the standards." This provision would allow states to prohibit or impose conditions on any use they deem inconsistent with their designated uses even in instances where the proposed use would otherwise maintain water quality in compliance with state standards. Indeed some states have erroneously interpreted their current authority under Section 401 to include this expansive authority over use of the waterway with frequently serious ramifications for the hydropower industry. Although we appreciate a state's desire to control both the quality and the use of waterways in that state, we also appreciate the need to protect the critical federal interests involved in the use of interstate waters. We believe a federal/state cooperative approach is required here to avoid unnecessary and counterproductive intergovernmental tension. Accordingly, we submit that the expansion of state authority proposed in S. 1114 is ill-conceived and would seriously undermine vital national interests that are already the subject of congressionally mandated comprehensive regulation.

Section 401 applies to "[a]ny applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in a discharge into navigable waters." 33 U.S.C. § 1341(a)(1). All of these federally permitted activities are subjected to comprehensive environmental review under NEPA. Furthermore, some of these activities, including hydropower development and licensing, are subject to an additional comprehensive public interest review that, by law, includes full consideration of relevant state, interstate, federal and public interests and concerns.

Contrary to the currently proposed language in Section 602 of S. 1114, the exercise of delegated authority by state water quality agencies should not be structured to duplicate or negate such comprehensive federal review. Rather, state authority in certifying proposed activities subject to such comprehensive review under a federal statute should rest exclusively on water quality considerations, *i.e.*, the composition of the water (criteria established to support a designated use), and should not assume control over or prohibit the proposed use of the waterway.

Admittedly, this approach falls short of the complete assumption of control over the use of waterways sought by many state water quality agencies, but does so in recognition of both the vital federal interests and existing federal regulatory processes structured by Congress to assure that the activity proposed will be approved only after comprehensive review of both federal and state interests in the activity.

Under the current federal licensing and Section 401 process, states will continue to enjoy substantial influence through their participation in comprehensive federal reviews and additional federal authorities available to the states with respect to water use. State interests in water resource development beyond concerns related strictly to water quality are certainly legitimate and they are accommodated in the federal licensing process through a variety of provisions under federal law. For example, in the hydropower context:

1. Comprehensive state plans for waterways are given substantial weight under Section 10(a)(2) of the FPA, 16 U.S.C. § 803(a)(2), and FERC is required to review the consistency of any proposed hydropower project with these plans.
2. States have the opportunity to protect a stream under the Wild & Scenic Rivers Act, 16 U.S.C. § 1271 *et seq.*, and, upon approval by the Secretary of the Interior, assume responsibility for management of any stream so designated.
3. The recommendations of state fish and wildlife agencies are included in FERC licenses under Section 10(j) of the FPA, 16 U.S.C. § 803(j), unless inconsistent with the FPA or other applicable law.
4. Other state interests in matters such as recreation, aesthetics, and cultural resources are considered and integrated into—federal licensing decisions under the comprehensive development standard of Section 10(a) of the FPA, 16 U.S.C. § 803(a).

NHA believes that this approach gives full effect to the purposes of the CWA and assures full consideration of state interests while preserving Congress' intent that federal interests involved in the use of a waterway will be regulated in a manner that assures fair treatment.

This approach is also just plain good government. A frequent complaint about government is that every time there is a proposal that, when viewed in isolation, seems like a good idea, a law is passed and an additional regulatory structure created that adds yet another layer of government approval with duplicative and potentially conflicting jurisdiction. While splintering authority over a proposed activity among multiple federal and state agencies may be attractive in trying to deal with the admittedly persistent tensions between state and federal interests with respect to water use, such an approach is disastrous for any attempt to undertake any business or activity in support of the Nation's continued economic growth.

To focus this discussion on a more practical level, it seems appropriate to ask where the problem lies. We all agree that states perform a perfectly proper role in certifying that the discharge from a proposed activity will or will not meet state water quality standards. Beyond that, S. 1114 proposes that states be authorized to maintain and protect state designated uses of a stream. This principle, in the abstract, sounds like a laudable concept. But we need to look closer.

For the federally permitted activities subject to state water quality certification under Section 401, what is achieved by a state assumption of control or approval of that use? Clearly, if a state water quality agency is placed in a position to approve, condition or prohibit each such use, that agency will in essence substitute its judgment for that of the federal agency now designated as decision-maker. Is that a good idea? It may be if the federal approval process is perfunctory. It clearly is not a good idea where there is a comprehensive federal approval process assuring that vital federal interests are fairly adjudicated along with legitimate state interests. A fundamental premise of our federal system is that there are interstate interests that cannot be adequately handled by individual states, whether in the name of the CWA or by passage of a state law.

A close look at the regulation of federally licensed hydroelectric projects reveals the unintended and potentially serious consequences that could result from an unqualified transfer of control over waterway use to state water quality agencies.

A state agency could impose a level of minimum flow that it deems required to maintain water quality, and at that flow level a hydroelectric project could be feasibly developed. In addition to that flow, an agency could determine that an additional minimum flow is required for some reason unrelated to water quality. The additional flow, however, will render the project economically infeasible. A state water quality agency with no mandate or expertise to evaluate the need for project power or the economic feasibility of the development would have no reason to do anything other than impose the additional flow. (This is what basically has happened in the State of Washington and a petition for certioraris is now pending before the United States Supreme Court. See *Washington v. PUD No. 1 of Jefferson County and the City of Tacoma. Dep't of Pub. Util.*, 121 Wash. 2d 179 (1993), *petition for cert. filed*, - U.S.L.W. - (U.S. June 1, 1993) (No.92-1911)).

To support a designated use such as fishing below a dam, & water quality agency in the state where the discharge originates could require minimum flows that interfere with a licensee's responsibility to maintain the water level required upstream of the dam for navigation and recreation on a reservoir located in an adjacent state. Similarly, such minimum flows could affect a licensee's ability to comply with regulation of its reservoir for interstate flood control, municipal water supply and/or regional power supply needs.

In any of the above scenarios, we do not imply that the state interest is inferior or necessarily subordinate. The point is that state interests with respect to the use of interstate waterways are only part of the equation. To place in the control of the state water quality agencies—through the power to maintain and protect state-designated uses—the ability to prohibit or encumber uses supporting critical federal interests is the equivalent to declaring all such uses subordinate to state-designated uses and abdicating the federal government's responsibility to protect the broader interests of the Nation's waterways. Certainly such drastic action is not required to maintain the quality of our Nation's waterways.

ANTIDegradation POLICY

NHA does not oppose the development of state antidegradation policies for maintaining the integrity of our Nation's waterways. In fact, NHA recognizes that the proposal to add an antidegradation policy to the CWA essentially codifies existing USEPA policy. NHA, however, has several concerns about S. 1114.

Section 202(c) of S. 1114 proposes to add a new Section 303(b) to the CWA to require states to develop and implement a plan to maintain and protect existing in-stream uses and the water and sediment quality needed to protect those uses. Further, states must maintain and protect existing water and sediment quality even when that quality exceeds the water and sediment quality standards established as necessary to maintain and protect fish, wildlife and recreation.

State application of these standards could prevent the development of projects that propose uses other than those already existing even when the state's established water quality standards are not impaired or when existing uses are not the most beneficial. An exception to this requirement is permitted when necessary to accommodate important economic or social development as determined by the state under proposed Section 303(b)(2)(B).

NHA proposes that, as part of the comprehensive public interest reviews conducted by relevant federal agencies, *i.e.*, the Secretary of Interior, the Secretary of Energy, the Secretary of Agriculture, and FERC, be granted independent authority to make a determination regarding the importance of economic and social development based on federal interests. Where state determinations conflict with a federal determination on economic necessity, federal agencies may override the state determination as long as the federal determination is consistent with its federal authority for comprehensive review and the proposed activity otherwise complies with state water quality standards.

WATERSHED MANAGEMENT PLANS

Before NHA can meaningfully comment on the proposal to permit states to develop watershed management plans, clarification on a number of fundamental issues is required. For example, it is not clear what the intended use of watershed management plans is in the federal review of proposed projects, whether the management plan will have independent regulatory effect apart from established state water quality standards, and who makes the determination that each federal agency activity will be carried out in a manner that is consistent with the policies established in watershed management plans.

The NHA views watershed management plans as potentially helpful planning vehicles to coordinate relevant regulatory activities and provide guidance with respect to proposed activities within the watershed management unit. As such, watershed management plans could and should be treated as other comprehensive state plans, which are considered under Section 10(a)(2) of the FPA, 16 U.S.C. § 803(a)(2). Such plans could assist federal agencies and applicants for federal licenses in determining whether a proposed activity would be consistent with the state's plans for the watershed unit. As part of its overall review of a project, the federal agency must consider the consistency of the proposed activity with the state plan in making its comprehensive public interest finding.

Apparently, Section 302 of S. 1114 intends to make watershed management plans more than just state comprehensive planning documents. To the extent a determination of consistency with the plan is intended as a second tier state evaluation of whether a proposed federal activity would meet state water quality standards, we believe this mechanism would create an unwieldy and burdensome regulatory process. As a second tier review of a federal agency activity, each state could require an applicant for a federal license to meet established water quality standards for a standard Section 401 certification and then impose an additional and potentially more stringent set of criteria for a separate finding of consistency with a watershed management plan. A more appropriate approach would be to integrate the results of

the watershed planning process into the relevant requirements of existing approvals and standards.

Any independent consideration of the consistency of a proposed activity with the state watershed management plan should be conducted by the federal agencies charged with authorizing the relevant activity. The plans should be taken into account with deference by the federal agency in making its determination of the public interest in acting on a specific proposal and could be particularly helpful in assessing the relative merits of competing stream uses. The requirement that any federal activity unequivocally shall be consistent with such plans and may be exempted therefrom only on the basis of a Presidential exemption is unnecessarily stringent for this, as yet, untested program.

NHA recommends an incremental approach be adopted in implementing this watershed planning concept. This may indeed be a useful vehicle for integrating and coordinating a wide variety of activities, but Congress should not act precipitously to convert such plans into a new regulatory context with potent and largely undefined powers.

Our concerns about elevating watershed management plans to independent regulatory status are heightened by broad definition of eligible management entities for watershed management units. The wisdom and legality of vesting governmental or quasi-governmental authority in the listed entities, especially nonprofit entities, is questionable and of considerable concern.

Inasmuch as the hydropower industry could be critically affected by this watershed management planning process, we are eager to pursue this concept with you further to clarify the ambiguities in the current proposal and recommend revisions that will insure that this becomes a workable and productive initiative that will protect the valuable resources and ecological integrity of our Nation's watersheds.

NONPOINT SOURCE MANAGEMENT

Section 304 of S. 1114 proposes revisions to Section 319 of the CWA, 33 U.S.C. § 1329, with respect to nonpoint source management programs. Under the proposed amendments, the President would be required to direct federal agencies that own or manage land to implement regulations to ensure implementation of measures to control nonpoint source pollution. Through the special-use permit and rights-of-way granted under the Federal Land Policy and Management Act, these requirements would apply to federally licensed hydroelectric projects located on federal lands.

S. 1114 further proposes to require that any license or permit granted "between a Federal agency and any person authorizing activities on Federal lands" and in effect upon passage of the bill may remain in effect for no longer than five (5) years. The reference in this provision to "any Federal agency" should be deleted. Otherwise, this provision would overturn federal licenses and permits on which individuals, utilities, businesses and communities now rely. Furthermore, it would leave open the possibility that federal agencies other than federal land management agencies may be constrained by this provision. Licenses issued by FERC for periods of up to 50 years arguably could be modified contrary to Section 6 of the FPA, 16 U.S.C. § 799, which prohibits' unilateral alterations by Congress or FERC of any license issued.

Even assuming this proposed amendment applies only to permits and approvals issued by federal land management agencies, the five (5) year limitation poses serious obstacles to successfully financing and carrying out many such federally approved activities. In the case of a hydroelectric project, the expiration of any related special-use permit or right-of-way every five (5) years would present an impossible situation. The development of new hydroelectric capacity, whether at a new project or an existing dam, is a capital intensive undertaking, requiring the amortization of a substantial investment over a long period of time. The typical license for a new capacity project involving the construction of a new dam is issued for a period of 50 years. Redevelopment of capacity at existing projects is authorized with a minimum 30 year license. The security of the right to operate a project under stated terms and conditions for these time periods is a prerequisite to successful financing of this renewable energy development.

Failure to apply this five (5) year limitation to federally licensed hydroelectric projects does not mean that the regulation of these projects will not be adapted and updated to changing environmental and other needs. Licenses issued by FERC provide for future resource needs through specific license conditions that require monitoring and modifications for anticipated eventualities. FERC licenses also provide for unanticipated resource needs through standard license conditions that allow for reopening and reexamining license terms to address fish and 'wildlife, water quality and other resource needs. This examination is conducted under the comprehensive

development standard, which assures that any new conditions—although they may impose additional expense or inconvenience on a project—will not undermine the fundamental economic feasibility of project operations or other resource interests during the license term.

CONCLUSION

NHA supports a comprehensive and fair approach to maintaining and improving water quality on the Nation's waterways. As a federally regulated industry that directly uses the waterways, the hydropower industry has an overriding interest in the proper and fair regulation of that use. Any action taken that would grant states authority over the use—as opposed to the quality of—interstate waters must proceed in full recognition of federal interests in addition to maintenance of water quality. Just as the approach to resource protection has recognized the need to expand its scope to encompass entire watersheds, ecosystems, and bioregions, so too must water quality or other environmental protection legislation look beyond itself and embrace a broader universe that includes the economic, energy supply and other compelling public needs that we as a Nation must serve.

We very much appreciate the opportunity to address these critical issues facing the Committee. You are to be commended for holding these hearings and taking on the daunting task of improving the implementation of the CWA in a manner that will serve the goals of that act, while preserving equally important national policies and programs. NHA stands ready to assist in this process to assure that an improved CWA will work effectively in conjunction with such other federal statutes, including the FPA.

TESTIMONY OF WENDY NERO, WATER CONSERVATION MANGER, CITY OF TAMPA, FLORIDA

Good morning Mr. Chairman. My name is Wendy Nero. I am the Water Conservation Manager for the City of Tampa, Water Department. The Tampa Water Department is a publicly owned utility which provides drinking water to about 800,000 residents through 120,000 service connections. We have been actively implementing a water conservation program since 1989. To date, we have reduced water usage by almost 10 million gallons a day, which represents 12 percent of the city's average daily usage.

I am here on behalf of the City of Tampa and represent the views of a public utility, with regard to the water efficiency provisions of Senate Bill 1114, amending the Clean Water Act. I am also involved with the conservation committee of the American Water Works Association at the state and national level.

Introduction

The Tampa Water Department believes that the efficient use of existing water supplies is becoming increasingly important, not only in Florida but across the country. Recurring drought and population growth in areas with limited water supplies, and the costs associated with new supply development, further emphasize the need to use water wisely and efficiently.

The conservation program in Tampa grew from a combination of problems similar to the above scenario. In the 1980's, we experienced rapid population growth and saw an increase in water demands of 27 percent. This, coupled with severe drought, left us in a situation where demands for water would exceed available supplies by the middle 1990's. Conservation was originally intended to "stretch" existing supplies until new alternatives could be developed. That strategy quickly changed from one of emergency response to a long-term, water management tool.

The Tampa program is a comprehensive one which relies upon economic incentives, regulations, and education to motivate the use of water efficient technologies and conservation behavior. Our efforts target single and multi-family residential, commercial and institutional customers and seeks to improve efficiency indoors and out. The following is a brief description of Tampa's major initiatives.

Technology Based Conservation

RESIDENTIAL RETROFIT: In this program we provide single-family customers with water saving kits, free of charge. Each kit contains showerheads, faucet aerators and a displacement device for the toilet. In 1994, the city will complete the final phase of it's ongoing retrofit program—in which roughly 90,000 homeowners in Tampa will have been given a water saving kit. Program evaluations demonstrate a nine gallon per capita per day savings from this program.

TOILET REBATE: This program offers homeowners up to \$100 for each conventional toilet they replace with a low consumption model. This year we have issued 800 rebates and plan to issue an additional 2,500 in 1994. Savings are expected to be approximately 16 percent of average indoor water usage, or 13 gallons a day.

LANDSCAPE WATER AUDIT: In Florida, most landscapes require supplemental irrigation all year long. There is tremendous waste in landscape water use in Tampa and great potential to increase efficiency. Landscape and irrigation evaluations are offered, free of charge to interested residents and commercial customers. In addition, customers will be provided with a free rain shut-off device, which they must install. If we have not received installation receipts within 30 days, the customer will be billed for the cost of the device.

Educational Efforts

IN SCHOOL: Education is fundamental to the success of any conservation effort. In-school programs include a cooperative effort with the Southwest Florida Water Management District involving teacher training and a live production of a conservation play. More than 30,000 students in 40 schools will be included in the classroom training and will see the live performance.

PUBLIC EDUCATION: Additional educational efforts promote specific conservation programs offered by the City and are designed to encourage customer participation in the program targeted. Demonstration projects will also be developed to show the water saving ability of new technologies or practices.

INDUSTRY TRAINING: Additional plans for education include seminars on conservation techniques for businesses, homeowners and other water users. Workshops for the plumbing, landscape and irrigation industries are also planned. These efforts will enhance technology transfer efforts.

Utility Management

RATE STRUCTURE: Tampa is fully metered. In 1990, Tampa modified it's rate structure for all customer types. A two block structure, based on average monthly water use by customer class, was established. Once a customer exceeds it's class average a conservation rate, or surcharge, applies.

ANNUAL WATER AUDIT: Each year, we conduct an annual water audit to identify lost or unaccounted-for water in the system. This information provides the rationale for pursuing loss reduction strategies. In Tampa, the greatest reduction in unaccounted-for water could be achieved through a meter testing, repair and replacement program. A system-wide leak detection and repair program was not justified based on the results of the audit.

Regulatory Programs

CODES: Over the past several years, the City has amended ordinances to require certain conservation measures. The landscape code, irrigation ordinance and plumbing code have all been modified to maximize water efficiency. For example, the landscape code calls for native and drought tolerant plant material, the irrigation code limits lawn watering to two days per week and the plumbing code requires the use of low consumption fixtures.

Conclusion

There are several reasons why Tampa's program has been successful. First, considerable support from Mayor Freedman and other elected officials, as well as from the leadership within the water department, has been crucial. Second, grants from the Environmental Protection Agency (EPA) and the regional water management district provided funds to implement programs when we might not have otherwise. Third, technical assistance from experienced utilities, the American Water Works Association and the Southwest Florida Water Management District was key to developing expertise in Tampa.

Finally, I would like to offer a few thoughts on the proposed amendments to the clean water act.

1) EPA is assigned primary responsibility for overall coordination of Section 113, as well as administration of the Clearinghouse; but all aspects of technical assistance are to come through the Army Corps of Engineers. Both functions should reside in the same organization, and it is suggested that the EPA be the responsible agency.

2) Conservation planning needs to occur within a broader comprehensive planning context than is referenced. Integrated Resource Planning (IRP) is becoming the standard approach used by utilities. IRP is defined as "a comprehensive approach to evaluating supply-side and demand-side resource alternatives with respect to explic-

itly defined and often conflicting objectives. IRP encompasses least-cost planning, but is broader in its emphasis on an open and participatory decision making process, the use of planning scenarios that incorporate variations in uncertainty and long term community needs, and consideration of the multiple institutions concerned with water resources and the competing policy goals among them.

3) The proposed bill calls for public awareness campaigns. A provision for youth based education should also be considered, and should include curriculum as well as materials.

4) It is also stated that utilities should provide financial incentives to encourage water conservation. These incentives should also include rebates, credits and reduced impact and/or connection fees.

5) S. 1114 requires leak detection and repair. This may not be necessary or cost effective, based on the results of utility level water audits. It is preferable that an annual water audit of the utility be required instead and appropriate action taken.

6) Section (b)4.A. provides grants to "study" conservation measures. Although this is very important, it is equally important that funds be made available for project implementation as well. This could be accomplished through grants or possibly through the existing state revolving loan funds.

7) A national clearinghouse is very strongly supported, whether administered internally or through contract. This will provide necessary, well documented information for entities undertaking conservation initiatives.

Mr. Chairman, the Tampa Water Department appreciates the opportunity to present its conservation program and views on the proposed amendments to the Clean Water Act. I believe that this bill provides needed direction and establishes a positive federal role in motivating conservation. Thank you very much for the opportunity to comment.

REAUTHORIZATION OF THE CLEAN WATER ACT

WEDNESDAY, SEPTEMBER 15, 1993

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
SUBCOMMITTEE ON CLEAN WATER, FISHERIES,
AND WILDLIFE,
Washington, DC.

WETLANDS ISSUES

The subcommittee met, pursuant to recess, at 9:37 a.m. in room SD-106, Dirksen Senate Office Building, Hon. Bob Graham [chairman of the subcommittee] presiding.

Present: Senators Graham, Kempthorne, Faircloth, Reid, Lieberman and Baucus.

OPENING STATEMENT OF HON. BOB GRAHAM, U.S. SENATOR FROM THE STATE OF FLORIDA

Senator GRAHAM. Let's call the meeting to order.

Today this subcommittee completes its schedule of hearings on the reauthorization of the Clean Water Act. This is the eighth in our series of hearings. Today, we will focus on the issue of wetlands.

In July, I announced that this hearing would be postponed until September to allow the administration to complete its review of wetlands policies. Since then, two relevant events have occurred. On July 28th, Senators Baucus and Chafee filed wetlands legislation for our review. On August 24th, the administration announced a set of wetlands' principles. We will review both the legislation and the administration's recommendation today.

Wetlands are generally considered to be one of our most valuable aquatic resources. That has not always been the case. Wetlands' functions and values have been historically misunderstood and misdirected policies have led to an alarming rate of wetlands destruction. Since our country was settled, we have lost half of our Nation's wetlands. We continue to lose them at an alarming rate, a rate of 300,000 acres per year. To put that in context, that means that every second, every second, we lose an the area of wetlands slightly larger than this hearing room.

Today, we understand the values of wetlands more clearly. Some estimate that half to two-thirds of our threatened and endangered species depend upon our fresh water, coastal and riparian wetlands. In Florida, for example, nearly 30 threatened and endangered species depend on wetlands for their survival. Wetland habi-

tat destruction threatens each of them, including the American Crocodile and the West Indian Manatee.

More than just the home to a rich and diverse number of species, wetlands serve critical ecological and economic purposes. Wetlands improve water quality by abating floods, recharging groundwater, trapping soil sediments and filtering water that moves through them. Wetlands also contribute 60 to 90 percent of our commercial fish catches valued at \$10 billion a year and support billions of dollars in recreational fishing. Incredibly, despite their obvious value as a water resource and despite the continued rate of loss, the word wetland does not appear in the Clean Water Act.

One consequence of the absence of clear direction from Congress has been much criticism of regulatory programs. The regulation of the discharge of dredge and fill into wetlands has been criticized as unpredictable, inconsistent and unfair. The harshest critics have seen regulation as a taking of private property. Many question whether all wetlands are the same, whether we should limit our regulation to those of the greatest value. Others point to the functions that wetlands serve and contend that we've lost too many acres of wetlands already. They urge Congress to adopt a no net loss policy.

Before we can discuss these issues, I believe we must take this opportunity to clearly articulate in the Clean Water Act, what is the national role in the protection of wetlands. To do that, we must first explore the Federal interest in protection. Most actions that are designed to protect wetlands fall within traditional responsibilities of States, responsibilities over land and water use planning. Consequently, I believe we must determine the appropriate allocation of responsibilities between the Federal Government and the States.

To help us do that, today we will hear from the administration on the proposals of the Interagency Task Force convened in response to the urging of several Senators. Most of the recommendations are reflected in the legislation which has been filed by Senators Baucus and Chafee.

We will also hear from Senator Boxer on her proposal for wetlands reform. We will review the programs in a number of States and hear from a diverse number of interested parties. We will discuss with Senator Murkowski and others problems unique to Alaska.

Significantly, we will also learn from two distinguished scientists the functions and values of wetlands in both the eastern and western United States to help guide our view of existing problems and their solution. I am struck by their statements demonstrating both ecological and economical value to the protection of this resource.

Before we begin, I would like to briefly announce how we intend to proceed when this hearing has concluded. By the end of today, the subcommittee will have held eight hearings and taken testimony of just over 100 witnesses. In addition, dozens of organizations have submitted statements for the record. We have received over 1,000 specific recommendations. Subcommittee staff has begun the process of reviewing the record and will begin in earnest the process of developing a mark-up vehicle that will incorporate many of those suggestions as well as wetlands issues which will be discussed

today. Included in that review will be over 20 separate bills that have been filed, most of which were discussed at our regional hearing on August 4th. We hope that in the next few weeks a draft of the markup will be available for subcommittee review.

At our first hearing on June 16th, I announced my intention to hold a subcommittee markup for the reauthorization of the Clean Water Act in October. We are still on that schedule. It is still the intention of Senator Baucus that the bill be presented to the full committee for mark up this fall as well.

To accommodate a scheduling problem, we will begin with a panel of Federal agencies to hear the administration position. Unfortunately, I will have to leave shortly for a brief appearance at another committee but will then return.

I wish to express my appreciation to all of the witnesses, some of whom have been of assistance to this subcommittee at previous hearings. For that, I thank you. A repeat appearance is especially appreciated.

We are joined by Senator Kempthorne, a very diligent and dedicated member of this subcommittee. Senator Kempthorne, do you have an opening statement?

**OPENING STATEMENT OF HON. DIRK KEMPTHORNE, U.S.
SENATOR FROM THE STATE OF IDAHO**

Senator KEMPTHORNE. Mr. Chairman, thank you very much. I appreciate your leadership on this entire effort.

It is an issue that I believe we definitely must resolve, not only being able to define what is a wetland, but just as importantly, what is not a wetland. While I've heard from a number of my constituents regarding many of the provisions of Senate Bill 1114, the proposed wetlands reform has perhaps sparked the broadest interest in my State. It is this area of law that has brought me back into the Constitution's protection for private property rights. It is the one that has led many average Americans, and I believe particularly those who have saved and invested in land, to view Government acts of environmental protection as increasingly slow, unpredictable, arbitrary and intrusive. I believe that many of these problems are attributable to a wetlands regulatory regime that has grown up in a haphazard manner without clear imprint by the United States Congress.

Now is the time to correct that fault. Perhaps better than at any other time in the past, we understand the unique role that wetlands play in filtering pollutants, providing natural flood protection and supporting critical habitat for all sorts of wildlife.

To that equation we can add, I hope, a greater willingness on the part of this committee and our colleagues in the Senate to minimize the kind of regulatory burdens that we impose on our fellow citizens who must live under this law. I'm encouraged by the recommendations announced by the administration. We've not seen the details but the recommendations attempt to redress some of the long-standing concerns held by my fellow Idahoans. For example, the proposal to designate the Soil Conservation Service as the lead agency for wetlands determinations on agricultural lands offers to farmers the prospect that they will have some relief from

bureaucratic indecision and delay. These are the inevitable result when different agencies assert their competing jurisdictional authority.

Likewise, the proposal to provide an administrative appeals process to challenge determinations regarding jurisdiction, permitting and administrative penalties may mean that Americans caught in the wetlands web can resolve their conflicts with the Federal Government through means other than costly litigation. On the other hand, the administration's proposals expand the statutory definition of wetlands and the scope of regulated activities within wetlands. These and other recommendations in the administration's proposal and Senate Bill 1304, the bill introduced by my colleagues on this committee, I want to review with great care.

Mr. Chairman, I look forward to working with you on this very important issue and I know that we have an outstanding panel of witnesses today and I look forward to their input in helping us resolve this issue.

Thank you.

Senator GRAHAM. Thank you very much, Senator.

We've also been joined by another very important member of this subcommittee, Senator Faircloth.

**OPENING STATEMENT OF HON. LAUCH FAIRCLOTH, U.S.
SENATOR FROM THE STATE OF NORTH CAROLINA**

Senator FAIRCLOTH. Thank you, Mr. Chairman.

I plan to keep my opening remarks short but this is a very important issue to me and I intend to pursue it with vigor.

No single issue before the Environment Committee this year is more important to all of us as a Nation than wetlands. I have spent my entire life close to the land as a farmer. I feel as though I know wetlands and their importance. There is no doubt in my mind that certain wetlands deserve the highest protection we can give them and this country's policy for 150 years, as Chairman Graham knows better than any of us, was to treat them as end uses, to drain, develop and farm them. That policy had some validity for its day but it has no place now. That, I'm aware of.

However, a lot of what is called wetlands by the Federal bureaucracy and the environmental community does not deserve the fanatical protection which it is now being given and is proposed to be given.

At the first hearing of this committee I ever attended, Senator Chafee kept saying don't use the word balance, I don't want to hear the word balance. If ever there was an issue that needs the word balance, it's the wetlands issue. The pendulum has swung too far toward the protection of so-called wetlands and what is called wetlands. I'm for protecting wetlands but everything isn't a wetland.

Farmers have become criminals, bone dry land has become navigable streams, private property has become a public preserve, oftentimes without a hearing, an appeal, or logic or any of the other processes by which we should make wise decisions and by which any other governmental decision can be appealed or questioned. It doesn't apply to the wetlands.

Chairman Baucus and Senator Chafee's wetland proposal is a step in the right direction, but a small short step. It seems to me that the Baucus-Chafee proposal streamlines a very flawed process. We need to recognize in law, regulations and treatment that all wetlands are not created equal, that private property is still a value in this country and we cannot prosper without it, and that all who impact wetlands do not deserve to be treated as Federal criminals.

As an adjunct to that, we'll take a State, Chairman Graham's. The Everglades probably has attracted more attention nationwide as an area to preserve than any other wetlands in the Nation by far. This process of draining the wetlands began at the turn of the century. In 1916, the builder of the Tamiami Trail brought the flow of the Shark River into the Gulf. There was continuous drainage as most of the wetlands in this country have been drained. They've been drained by the Federal Government. The private sector never had the money to do it. The SCS, for years and years and years, paid for engineering, design and the cost of drainage canals. The entire Florida drainage system began in the Everglades in 1926 which then followed with pulping, levees, and was all Federal without which there would be very little intrusion upon the Everglades.

Senator Graham, as Governor in the early 1980's, began to reverse this trend, as well he should. So he is aware, but I think we need to bear in mind that the drainage of the wetlands of the United States was not an act of the private sector but an act of the public sector and the Corps of Engineers and the Soil Conservation Service. I believe we need to bear that in mind as we move through this today.

Senator GRAHAM. Thank you, Senator.
Senator Reid?

OPENING STATEMENT OF HON. HARRY REID, U.S. SENATOR FROM THE STATE OF NEVADA

Senator REID. Thank you very much, Mr. Chairman.

I appreciate your arranging this meeting. I want to commend you for the work that you've done on the subcommittee and certainly on the Clean Water reauthorization issue during the past few months.

The subject of this hearing, wetlands, is one more major policy debate facing this committee and the Nation that I think desperately needs a solution. We must resolve this problem so we can get on with protecting these valuable wetlands and the economic sector of the country can continue to grow and produce jobs.

It is often said that issues like wetlands are not as significant in areas like Nevada where people surmise there are few, if any, wetlands because of the arid nature of the State. The fact of the matter is, we certainly have much less area in wetlands than States like Florida and Alaska and many other States, in fact, most other States, but those we have are extremely important.

Most people don't realize that we have the only link for migratory birds going south and then north. If it weren't for the Stillwater Marshes, the number of migratory birds would be cut down significantly. So I've been involved in trying to restore these extremely

valuable wetlands known as the Stillwater Marsh in the northern part of Nevada and we're making some progress.

There are projects in the southern part of the State to create and restore wetlands that I support as well, but in truth, when you have few wetlands to protect, it becomes even more important that we protect them, at least we think so.

I've seen the new proposal the administration has issued on wetlands and combined with the bill the committee has offered, it appears to me that we are on a course in trying to work out this most difficult issue. I certainly want to extend my hand of cooperation to you.

I also want to make a brief mention of another issue the committee finds itself confronted with. I make it now because there is no other time to make the statement and that deals with the Safe Drinking Water Act reauthorization. I've also seen the administration's proposals on this issue and I'm encouraged but not totally satisfied by the points that they've made in regard to assisting small water companies in the communities that they serve across the Nation, particularly in rural areas in the West, especially in Nevada. I remain concerned about how we can develop and implement these ideas in a new Safe Drinking Water Act.

Many of these companies and communities are hard pressed to find the money to build new systems and have little or no hope of finding regional or other solutions to their drinking water problems. I believe this committee has an obligation to go the extra mile and ensure that the hardships we place on these communities and the residents, many of whom are on fixed incomes and cannot afford for their water rates to increase. I had one company indicate that they would go up as much as 1,000 percent. We have to do something to mitigate these to the maximum extent possible in our efforts to resolve the policy issue.

The Administration has made a recommendation to ensure the viability of small systems, to maintain half of them, half of them probably would not be able to exist, but at least have some ability to phase them out so there would not be any violent damage done to the community and the areas they serve.

In the future, I intend to offer additional comments on how we can build on some of the ideas the administration has offered regarding clean drinking water.

Once again, I look forward to working with you and the members of this committee on the two issues that I've talked about today, wetlands and clean drinking water.

Senator GRAHAM. Thank you very much, Senator.
Senator Durenberger of Minnesota.

**OPENING STATEMENT OF HON. DAVE DURENBERGER, U.S.
SENATOR FROM THE STATE OF MINNESOTA**

Senator DURENBERGER. Mr. Chairman, thank you.

In 1991, the Environmental Protection Subcommittee held a series of hearings on wetlands and at that time, I had the opportunity to offer a short list of reforms that I thought would make Section 404 of the Clean Water Act work better. I'm pleased that S. 1304, the bill introduced by the leadership of this committee cov-

ered most of those items. I want to commend Senators Baucus and Chafee for the balanced bill they've presented.

The five items that I listed in 1991 started with a greater role for the States. I asked that we look for opportunities to enhance the State role in addition to the delegation of section 404. The watershed planning and general permit provisions in 1304 provide the flexibility necessary to assure broader State and local participation in the program.

Second on my list was an expansion of the jurisdictional activities under section 404 to include drainage, channelization, and excavation which may adversely affect wetlands. That item is not only in the Baucus-Chafee bill but it is also in the bill introduced by Senator Boxer and it is in the bill offered by Congressman Hayes on the House side. So it seems to me that is a consensus to fix 404.

Third on my list was a concern for the general permits issued by the Corps of Engineers. We have to find a mechanism to ensure that the wetlands losses resulting from the nationwide permits are offset by gains. S. 1304 recognizes the problem both in the goal it establishes for a long-term net gain in our wetland resources and in the requirement that Federal agencies account for the cumulative impact of losses under the general permits issued by the Corps.

At the time of our 1991 hearings, the Delineation Manual was at the top of everyone's list of wetlands issues. Now we're awaiting a National Academy of Sciences report on the science that should inform delineation decisions. Those that have criticized the section 404 program for its deficiency in the science underlying some decisions have been right on the mark. The NAS report should help answer these questions.

In addition to better science, I urge that any future revisions to the manual be made on the public record with a full opportunity for public comment. I'd hasten to add that the manual should continue to be a scientific document and not a reflection of the public policy dispute about how much of the resource we ought to preserve. S. 1304 requires a revision to the manual to be an informal rulemaking with full opportunity for public comment.

S. 1304 squarely addresses each of these issues in a balanced way and deserves our support, but I do have one additional concern which is not addressed in S. 1304 and maybe it's beyond the reach of this committee but I hope not.

Some of our witnesses today will point out that 75 percent of our wetlands resources are in private hands, that we can never have a successful conservation program without recognizing the private role, and I agree. We have to provide conservation incentives for landowners. The whole thing here is an issue of accountability, do you want negative accountability, the \$25,800 a day penalties that my colleague from North Carolina just pointed out to me or do you want some positive accountability. I say this particularly on behalf of farmers and ranchers because in my State—I think the ranking member of this committee who said he's never seen a wetland restoration could come to my State and see some of them. A lot of them that he comes to see are going to be private restorations as well as combinations of public and private and so this whole issue with positive incentives to owners I think is critical.

I'm not talking about a full compensation through public taking, imminent domain as a requirement for any wetlands class as critical habitat. That would be a formula for less in my view rather than more wetlands protection. There have to be ways to encourage the private interest in wetlands conservation and I hope in this audience today there are people who have thought about this longer, deeper and broader than I. I know Senator Boxer's bill includes some of these options and I hope that we can explore this side of the question more fully.

Having said that, Mr. Chairman, you can count on me as one member of the subcommittee who will enthusiastically support inclusion of 1304 in the Clean Water Act reauthorization legislation.

Senator GRAHAM. Thank you very much, Senator.

Senator Lieberman of Connecticut?

**STATEMENT OF HON. JOSEPH I. LIEBERMAN, U.S. SENATOR
FROM THE STATE OF CONNECTICUT**

Senator LIEBERMAN. Thank you, Mr. Chairman.

I congratulate you for convening this hearing which is an ambitious one on such an important and complex issue.

This Senate Committee on Environment and Public Works is fortunate to have your leadership in this matter as well as the leadership of Senators Baucus and Chafee, both strong supporters of wetlands protection.

The environmental community also deserves some credit for bringing us to this point, I believe. Their consistent fight to elevate discussion of wetlands regulation to a discussion of wetlands values, which is to say what we give up when we give up swamps and marshes and bogs and fens, has helped to set the stage for what I believe is a major breakthrough by the Clinton Administration in addressing the problems associated with wetlands loss in our country.

Most people in this room know that the Clean Water Act's 404 Program was not designed for the sole purpose of protecting against wetlands loss. In some sense, our Nation and our Government backed into a wetlands policy. If 404 had been designed for the sole purpose of protecting against wetlands loss, the activities which it regulates would not be limited to the disposal of dredge or fill material, nor arguably would we have designed its regulatory structure in quite the same way. If we were designing a program to give wetlands protection under the Clean Water Act, we certainly would have noted up front the functional values of wetlands, which is to say why it is we care about preserving them at all. Vernal pools, salt marsh, prairie potholes, these are not terms easily worked into the every day vocabulary.

A comprehensive program to protect wetlands would have given us a picture of them nonetheless and what they do for us. We'd see their connection to the rest of the Clean Water Act and their importance to the rest of our environmental statutes. Wetlands, after all, store flood waters and they keep our drinking water pure. Without them, we must pay to build the infrastructure to perform these same functions.

In Connecticut, the coastal wetlands service shellfish nurseries. They filter urban and agricultural runoff before it hits Long Island Sound. The forested wetlands of New England are where rare songbirds and other endangered species summer before heading to the tropical forests of Costa Rica. So there are many connections here that we would have noted.

If protecting wetlands had been stated as a priority in the Clean Water Act, we also would not have created a regulatory structure that at times enraged the very people we were hoping to work with in order to protect that resource. Since the vast majority of wetlands are on private lands, we certainly would not have sought to alienate private landowners or would-be developers.

By the same token, we wouldn't have sought to make it difficult for States or municipalities to get a quick answer on whether or not they could go forward with a project that had a wetlands impact. Flood control, drinking water purification, important fish and wildlife habitat all add significantly to a community's quality of life, and so do, of course, roads and housing and farms and harbors and managed forests.

Our efforts should be directed at ensuring now that whenever possible we can have them all or at least as many as possible, not pitting one group of societal goals and functions and values against another. This is where I think the Clinton Administration is to be most commended. The document released by the White House Office on Environmental Policy is one of the most lucid attempts that I at least have seen to try to not only rethink but recreate our Federal wetlands policy and programs. I commend the administration for identifying the problems and tackling them head-on.

This is not to say, of course, that the report is beyond questioning. For instance, while the report endorses mitigation banking, it does so conceptually reflecting the need for much more development of this idea. I note also, however, that any mitigation banking endorsement by the administration would be linked to comprehensive watershed planning which makes excellent sense. I would add that I was particularly impressed by the report section on the perils of national classification.

The heart of the interagency agreements seems to be the consolidation of Federal responsibilities for wetlands protection, assigning primary responsibility for wetlands decisions on agricultural lands to the Soil Conservation Service with assistance from the Fish and Wildlife Service, seems to me to be a sensible and necessary change.

So, Mr. Chairman, I think we have here an opportunity not to repeat what has happened up until now, which is to back into a national wetlands policy which was too often divisive, but in fact to create one head-on and so far as possible, to make it a policy that is not only productive and protective, but unifying.

Thank you.

Senator GRAHAM. Thank you very much, Senator.

If I could, I'd like to ask if you could chair the hearing for the next few moments. I must leave to participate in another hearing.

Our first panel consists of Mr. Jim Lyons, Assistant Secretary, Natural Resources and Environment, U.S. Department of Agriculture, who will be the principal spokesman for the administration's

wetlands policy; Mr. Robert H. Wayland, III, Director, Office of Wetlands, Oceans and Watersheds, U.S. Environmental Protection Agency; Dr. G. Edward Dickey, Acting Assistant Secretary for Civil Works, U.S. Corps of Engineers—Dr. Dickey, we appreciate your being with us again; Mr. Don Barry, Counselor, Office of the Assistant Secretary for Fish and Wildlife and Parks, U.S. Department of the Interior; and Mr. Doug Hall, Assistant Secretary, U.S. National Oceanic & Atmospheric Administration, U.S. Department of Commerce. Those will be the participants in our first panel.

While the panel is coming to the table, I want to acknowledge receipt of statements from Senators Breaux and Pryor and, without objection, they will be included in the record.

[The statements referred to follow:]

STATEMENT OF HON. JOHN BREAUX, U.S. SENATOR FROM THE STATE OF LOUISIANA

Mr. Chairman, thank you for conducting this hearing on the very important issue of federal wetlands regulatory policy as part of the Subcommittee on Clean Water, Fisheries and Wildlife's work on the Clean Water Act reauthorization. The wetlands regulatory program has not been debated by Congress since 1977. I also extend my thanks for focusing on this critical environmental issue to the Chairman and Ranking Minority Member of the Committee on Environment and Public Works, Senators Baucus and Chafee.

I would have liked to have had the opportunity to appear before the subcommittee, but I am joining the President in Louisiana today on other matters which also are important to my state.

One of the defining characteristics of Louisiana is its vast amount of coastal and river bottom wetlands. Louisiana possesses 40 percent of our nation's coastal wetlands which, in turn, support the nation's most abundant fishery. Unfortunately, Louisiana also has suffered some of the most significant wetlands losses in the nation due both to natural occurrences and the actions of man.

Today, over 50 percent of our state is considered to be a federal jurisdictional wetland, with over 75 percent of that land in private ownership. Thus, in my state, the federal wetlands regulatory system is a very important program, not only with respect to the ongoing efforts to conserve our state's wetlands resources, but also with respect to necessary governmental infrastructure activities, private sector economic activities, and the rights of private landowners.

The current federal regulatory system, which has been developed over the last fifteen to twenty years, primarily through agency initiatives and judicial decisions, works neither for the environment nor for private landowners and land users.

With the introduction of S. 1304, the "Wetlands Conservation and Regulatory Improvements Act", by the Committee Chairman and the Committee's Ranking Minority Member, Senators Baucus and Chafee, and with President Clinton's announced wetlands policy plan, Senate debate on a national wetlands policy promises to be challenging and lively. I certainly look forward to it.

I take this opportunity to thank President Clinton for responding to the request of several of my colleagues and myself to form a White House Task Force to develop wetlands policy proposals. The President's recommendations are a first step in the right direction and are positive for the most part. Many of the details still need to be developed and refined. The recommendations establish a framework that we can work with in the days and weeks ahead as we debate amendments to the Clean Water Act.

Wetlands policy affects private landowners primarily. As such, any wetlands policy needs to be efficient, fair, and flexible. It must be administered in a manner which avoids unnecessary and unfair impacts upon private property and the regulated public.

Federal wetlands policy cannot consist primarily of avoidance of all economic activity on all wetlands. The President's plan, in particular, seems to add some flexibility to the current process for determining whether a permit for wetlands activity should be issued.

Some other key features of a national wetlands policy must include wetlands restoration, so critical to Louisiana; mitigation banks; coordinated wetlands regulation between the federal and state governments; an appeal process for private landown-

ers and an end to the difficulties the agriculture community has suffered under the current program.

In addition, wetlands need to be classified by functions and values. Not all wetlands possess the same functions and values. A regime needs to be established which not only recognizes this, but also implements an effective, usable classification system. Without such a system, our national policy will not square with the reality of the nation's diverse wetlands resources. Without such a system, all wetlands essentially will continue to be treated equally for regulatory purposes, which makes no sense and ignores reality.

Preserving the rights of landowners and providing an efficient method for compensating those landowners who lose the use and value of their property due to the operations of a wetlands program also must be addressed and contained in a national policy. These are some of the wetlands issues about which I continue to be concerned, Mr. Chairman.

The executive summary to the report of the National Performance Review is entitled, "From Red Tape to Results Creating a Government that Works Better and Costs Less". On page 8 of that summary, Vice President Gore is quoted from a March 26, 1993 statement, which I repeat here in part, "We are going to rationalize the way the federal government relates to the American People, and we are going to make the federal government customer friendly. . . ."

I believe, Mr. Chairman, that the Senate, the Congress and the nation must be about the business of creating a government that works better and costs less when it comes to developing and implementing a wetlands policy. We must make wetlands policy customer friendly. We must make wetlands policy work better and cost less.

Throughout the debate on wetlands, we must be always mindful of one key fact, that a significant portion of our wetlands are privately owned. In being mindful of this reality, we must be vigilant in our responsibility to develop and carry out a customer-friendly policy, one which works better and costs less and one which respects private property rights and treats private landowners fairly.

Thank you for allowing me to submit this statement to the subcommittee. I ask that it be included in the record of the hearing. I look forward to working with you, the committee and other Senators as we attempt to develop a balanced federal regulatory policy that works for the environment and for landowners, for state and local governments and for the economy.

STATEMENT OF HON. DAVID PRYOR, U.S. SENATOR FROM THE STATE OF ARKANSAS

Mr. Chairman, I commend this Committee for meeting today to take on the controversial and important wetlands debate. This issue confuses and frustrates so many Americans, including our farmers and ranchers, and I am delighted to see the Congress addressing this in what I hope will be a complete and comprehensive manner. In our effort, we face the challenge of balancing the wetlands as an environmental treasure and a natural resource. I appreciate the opportunity to provide my input on how our government should manage these lands.

Let me also commend the Clinton Administration for tackling this contentious issue by putting together an interagency working group that has developed what many have called a balanced and positive approach to solving this dilemma.

The confusing regulations and policies which have evolved over the years are largely due to agency regulations and court decisions as opposed to statutory guidance. Because the Corps of Engineers, the Soil Conservation Service, the Fish & Wildlife and the Environmental Protection Agency have all had a hand in past wetlands policy implementation, people across America have been baffled as to which organization has either the ultimate responsibility or the most useful information to resolve wetlands disputes.

Hopefully, the constructive approach used by the Administration and the willingness of Congress and others to work on this matter will be the shot in the arm this debate needs.

To assist in this effort, Senator Stevens and I recently formed the Senate Wetlands Caucus. We want it to provide a means for all senators to share information and provide input during this legislative process. So far, members of the Caucus are cautiously optimistic that the process can yield real results.

From Alaska to Arkansas, wetlands regulation affects a broad spectrum of unique situations and an equally broad spectrum of Americans. The caucus will help to

highlight the variety and gravity of the issues that must be addressed in the wetlands discussion.

I should point out that even since Senator Stevens and I introduced the Wetlands Caucus on the Senate floor earlier this year, there has been significant progress and more reason to hope for an equitable resolution. With the Clinton Administration Interagency Task Force work and S. 1304, the bill introduced by Senators Baucus and Chaffee, I believe we have an appropriate starting point to begin debate.

The interest of this committee, Administration involvement, legislation, the Caucus, and a willingness by most parties to roll up their sleeves and iron out differences—all add up to a workable framework for real progress.

Mr. Chairman, we stand at a point of great opportunity in a long and emotional debate. We must take this opportunity to reach toward new understandings that will eliminate the confusion and ambiguity that exists in our current wetlands policies.

I know I can say on behalf of the Wetlands Caucus we want to work with this Committee and all others to develop laws and regulations that are both concrete and reasonable.

Again, I thank you for this opportunity to testify before the Committee.

Senator GRAHAM. Mr. Lyons, why don't you begin?

STATEMENT OF JAMES R. LYONS, ASSISTANT SECRETARY, NATURAL RESOURCES AND ENVIRONMENT, DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY ROBERT H. WAYLAND, III, DIRECTOR, OFFICE OF WETLANDS, OCEANS AND WATERSHEDS, ENVIRONMENTAL PROTECTION AGENCY; G. EDWARD DICKEY, ACTING ASSISTANT SECRETARY FOR CIVIL WORKS, U.S. ARMY CORPS OF ENGINEERS; DON BARRY, COUNSELOR, OFFICE OF THE ASSISTANT SECRETARY FOR FISH AND WILDLIFE AND PARKS, U.S. DEPARTMENT OF THE INTERIOR; AND DOUG HALL, ASSISTANT SECRETARY, U.S. NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION, U.S. DEPARTMENT OF COMMERCE

Mr. LYONS. Thank you very much, Mr. Chairman and members of the subcommittee.

It is an honor to be here representing the administration and to present to you our proposed attempt to deal with the wetlands policy issues that have plagued the United States for some time now.

Let me make clear that this statement is being presented on behalf of not only the Department of Agriculture, but also the Environmental Protection Agency, the Army Corps of Engineers, the Department of the Interior and the National Oceanic and Atmospheric Administration. This joint statement, I believe, demonstrates the tremendous cooperation and coordination among the Federal agencies that have participated in the Interagency Working Group on Federal Wetlands Policy that has produced the administration's wetlands proposal which we present to you today.

Senator LIEBERMAN. [presiding] Mr. Lyons, let me just intervene for a courtesy and kind of a notification. It is our custom in the committee to use timing the so that we can hear everyone. The lights are on an 8-minute cycle. So we'd appreciate it if when the red comes on you could try to draw to a close.

Mr. LYONS. I'll try to work on an 8-minute cycle.

Senator LIEBERMAN. Thank you.

Mr. LYONS. Three weeks ago, the administration, as you know, released a comprehensive package of improvements to Federal wetlands policy and we believe this package reflects a broad-based consensus within the Executive Branch and clearly it's a departure

from the gridlock of the past and contains what we believe is a balanced, common sense, and workable set of initiatives that will make Federal wetlands policy fairer, better coordinated with State and local efforts, and more effective in protecting wetlands.

What I'd like to briefly do this morning is to discuss the process by which we put together this proposal and some of the key elements of the package.

The Interagency Working Group was formed in response to a request to President Clinton from seven Senators as Chairman Graham indicated. The purpose of the group was to provide a forum to allow the appropriate Federal agencies to work together with input from members of Congress and the public to develop a consensus on wetland policy issues. The group was convened by the White House Office on Environmental Policy in June and included nine agencies—the Environmental Protection Agency, the Army Corps of Engineers, OMB, and the Departments of Agriculture, Commerce, Energy, Interior, Justice and Transportation.

In addition to the Interagency discussions, which occurred over a long period of time, the working group solicited the views of a broad range of stakeholders representing all perspectives in the wetlands debate, including members of Congress, representatives of State and local government, environmental interests, the development community, agricultural interests, and the scientific community. With this information in mind, the group met intensively and developed proposals that we have to present to you today.

The Administration's plan includes both regulatory improvements and what we believe are innovative, nonregulatory approaches to protect and restore wetlands. It includes administrative actions, some of which took effect immediately, and others that will begin during the coming months. It also includes legislative recommendations for Congress' consideration during reauthorization of the Clean Water Act. Some of the themes of this package are consistent with those addressed in S. 1304 as well as S. 1114.

At this time, I'd like to highlight some of the specific elements of the policy. A guiding principle in formulating the policy was to exercise strong Federal leadership while empowering State and local action. The Administration believes that the Federal Government should lead by example as well as by directive. To this end, the existing Executive Order on wetlands will be revised to establish an interim goal of no overall net loss of wetlands and a long term goal of increasing the quantity and quality of wetlands in the United States. We are pleased to note that S. 1304 establishes the same short and long term goals as does the administration's proposal. The revised Executive Order will also direct Federal agencies to take a watershed or ecosystem management approach to wetlands protection and restoration in working toward these goals.

The Administration policy also identifies voluntary, nonregulatory wetlands restoration as an essential vehicle to achieving these goals. The Wetlands Reserve Program is a crucial part of the administration's wetlands restoration plan. The 1990 Farm Bill requires a minimum of 1 million acres to be enrolled in the WRP by the end of fiscal year 1995. The Reconciliation Act from 1993 amended the WRP acreage provisions to require not less than 330,000 acres be enrolled by the end of 1995, reduced the minimum

acreage target to 975,000 acres and extended the enrollment period to the year 2000.

In 1992, a 50,000 acre pilot project was very well received. In fact, we had proposals from 2300 farmers to restore nearly a quarter of a million acres of wetlands. The fiscal year 1994 agricultural provisions provide for 75,000 new acres to be enrolled and would more than double the number of States eligible for participation in the program. Under the policy, the administration will use this program in the Midwest in conjunction with emergency assistance programs to help restore wetlands and assist farmers affected by the recent flooding in the Mississippi.

In addition, the administration will examine opportunities to expand existing Federal programs that seek to restore wetlands through cooperative, voluntary agreements with private and other non-Federal landowners. The Administration is pleased to note that S. 1304 also promotes a similar wetlands restoration effort.

To increase State and local roles in wetlands protection and to reduce duplication between wetland protection programs on different levels of government, the administration encourages the Congress to adopt several measures.

The first is to authorize the development of State-tribal watershed protection programs which should provide for local and regional involvement and Federal approval of State programs, including minimum requirements for wetlands protection and restoration planning.

In addition, the administration recommends that Congress provide EPA with the authority to use its Wetlands Grant Program to fund both the development and implementation of State-tribal wetlands conservation plans. Congress should also authorize partial assumption of the section 404 Program by States and tribes as an interim step toward full assumption.

Finally, the administration recommends that the Congress should amend section 404(e) of the Clean Water Act to provide explicitly for the issuance of programmatic general permits with appropriate environmental safeguards for approved State, tribal, regional and local regulatory programs. Most of these measures, with the exception of those related to the assumption of section 404 programs, are in S. 1304.

The Administration policy will streamline and clarify wetlands programs affecting the agricultural community, something that we've debated long and hard in recent years. At the heart of this effort is a commitment on the part of all Federal agencies to minimize duplication and reduce inconsistencies between the swampbuster program provided for in the Farm Bill and section 404 programs provided for in the Clean Water Act.

To that end, the Soil Conservation Service will be the lead Federal agency for wetlands determinations on agricultural lands for both programs, in consultation with the Fish and Wildlife Service and under the programmatic oversight of the EPA and the Corps. The SCS will use agreed-upon methods that are consistent with those used by EPA and the Corps and will participate fully in an interagency training program to ensure that field personnel are properly trained.

In addition, the administration has issued a final rule that affirms the exclusion of an estimated 53 million acres of prior converted crop lands from Clean Water Act jurisdiction. These are areas that prior to December 1985 had been cropped and hydrologically manipulated to the extent that they no longer perform the functions they did when in their natural condition.

Consistent with S. 1304, the administration recommends corresponding congressional action to define the term "waters of the United States," in the Clean Water Act to exclude prior converted wetlands.

The Administration policy also addresses landowner concerns regarding the section 404 Program. The Corps will develop through rulemaking an administrative appeals process under the regulatory program so that landowners, farmers and others can seek review of jurisdictional determinations on permit denials without going to court. The Corps will also modify its regulations to impose deadlines to ensure that permitting decisions are made in a timely fashion. The policy also endorses the use of mitigation banks for compensatory mitigation under the section 404 Program with environmentally sound limits.

The Clinton policy takes several steps we believe to increase the predictability and public acceptance of efforts to identify areas as wetlands subject to the jurisdiction of the Clean Water Act. Use of the 1987 Wetlands Delineation Manual has provided a workable and broadly accepted delineation procedure over the past two years. The Administration supports continued use by all agencies of the 1987 manual pending completion and review of the National Academy of Sciences study which we expect to have in September of 1994. To increase public confidence in the Section 404 Program, the administration is also recommending congressional endorsement of continued use of the 1987 manual which again is provided for in S. 1304.

To put to rest the notion that Congress did not intend to protect wetlands in the Clean Water Act, the administration recommends that an explicit definition of the terms "wetland," and "waters of the United States," be included in the statute consistent with long-standing regulatory definitions. S. 1304 includes such a definition as well.

The plan recommends that Congress affirm these definitional changes in legislation, as does S. 1304, for the discharge of dredge or fill materials.

In conclusion, Mr. Chairman, we believe that this reform package represents a tremendous opportunity to move beyond the polarization that has characterized the wetlands policy debate in recent years. As indicated in this testimony, there are many similarities between the administration's policy and the provisions of S. 1304. We look forward to working closely with the committee to enact bipartisan legislation that will improve wetlands protection in the United States.

I want to thank you for this opportunity to appear before you and welcome any questions you might have to offer.

I also want to acknowledge my colleagues and partners who worked many hours to put together this policy program.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Mr. Lyons.

I gather that the other folks on the panel are not going to make opening statements but will be available for questioning.

Mr. LYONS. That is correct.

Senator LIEBERMAN. I appreciate that.

We'll run the clock on ourselves. Why don't we do it for five minutes for the members?

I'd like to address the structure of the statute and the way you dealt with it. I made reference to it in my opening statement, that so much of the authority we now invest in 404 for the purpose of protecting wetlands resources is really the result of court rulings. I wonder if the administration feels, that we've reached the point where we should be coming out and stating clearly the value of wetlands, why we should protect them, perhaps expanding on a list of the activities unacceptable in a wetland without a permit and perhaps having a separate title of the Clean Water Act that would deal specifically with wetlands. Mr. Wayland, do you want to answer that?

Mr. WAYLAND. Yes, Senator Lieberman.

Indeed, we do agree that the time has come and is perhaps past due to have a comprehensive and cogent series of provisions in the Clean Water Act which recognize the importance of wetlands and establish a framework for their protection.

Just to sort of illustrate the nature of the folklore and controversy that has grown up in this program, it is true that much of the current program has been implemented as a result of an evolution in our understanding of the value of wetlands and evolution in the regulatory tools to protect them. However, the word wetlands does indeed appear in the Clean Water Act but the folklore, of course, holds it has been repeated so often that even experts sometimes will assert that term does not appear in the statute. It is certainly the case that we can't look to the Clean Water Act and find the kind of comprehensive and straightforward provisions that would be extremely helpful to those of us who are trying to implement that statute.

Senator LIEBERMAN. I appreciate that. We look forward to working with you on that.

Let me ask about mitigation banking which is a topic around which some controversy swirls. I note that the administration's policy document endorses mitigation banking conceptually. I wonder if you would develop that a little bit, anybody on the panel. Let me just pose a few questions. Should mitigation banking be like kind; does everyone agree that if a rare coastal wetland or wetlands are taken that their loss should be compensated for by restoring other previously damaged coastal wetlands; should the compensation occur in the same State or in the same region? Just, if you would, develop the administration's thinking on mitigation banking a little bit beyond the conceptual.

Mr. DICKEY. Let me say something from the Army's perspective on mitigation banking. I think the focus is that we want to restore or mitigate the values and functions that would be lost by the permitted activity. So that would certainly be one principle, and if you accept that principle of maintaining functions and values, then you look for similar areas, similar geographic locations and so forth.

It is important to keep in mind that the use of mitigation banking, however, does not preclude or abolish the requirement to go through the sequencing process of avoidance and minimization and we really look to mitigation banking as a way that in certain circumstances, can offer a more attractive proposal or alternative to on-site mitigation. There's generally a preference for on-site mitigation because that is most likely to give you exactly the same values and functions but there are disadvantages there, particularly when you have isolated mitigation lands. It is very difficult, on a small scale sometimes, to restore the same values whereas if you have a bank, you do it on a large scale and you can get a better restoration of the functions and values that you lost. Also, you can have better management when you have a large tract. Also it simplifies the monitoring process.

One thing we are very concerned about is when you do have mitigation that you in fact monitor the Federal agencies, monitor to ensure that mitigation remains effective over time.

Senator LIEBERMAN. Who would monitor under mitigation banking?

Mr. DICKEY. I believe that the Corps or EPA. Again, this is something which we are going to be working out in our detailed guidance on this.

Senator LIEBERMAN. What is an appropriate period for monitoring?

Mr. DICKEY. I would say indefinitely. The idea is the values there.

Senator LIEBERMAN. I note that the administration endorses mitigation banking in the context of comprehensive watershed planning at the State level. Is that something that we should specifically write into the Clean Water Act reauthorization?

Mr. WAYLAND. Senator, if I could, both S. 1114 and S. 1304 do have watershed management provisions that we believe are a useful starting point for establishing the kinds of programs we think would help us to more effectively identify areas where restoration, be it in connection with the mitigation bank or private restoration effort or a public restoration effort, will have the greatest return for the environment from the public or private expenditure involved.

Senator LIEBERMAN. Finally, on this subject, are there successful examples of mitigation banking that we can point to now?

Mr. WAYLAND. There are about 100 operating or planned mitigation banks around the country of various sizes and scales, most of them relatively recent in their operation and it may be premature to declare any of them a complete success at this juncture. Most of them have been established for relatively specialized purposes, for example, to mitigate for transportation projects. I think the hope is that we may be able to see their availability broaden so that rather than having small developers undertake two acre restoration projects with limited prospects of success that we can, as Dr. Dickey said, have larger scale, more appropriately located and more professionally managed restoration efforts.

Senator LIEBERMAN. Thank you. My time is up.

Senator Faircloth?

Senator FAIRCLOTH. Senator Kempthorne was first.

Senator LIEBERMAN. I'm sorry, Senator Kempthorne.

Senator KEMPTHORNE. Thank you, Mr. Chairman. Thank you, Senator Faircloth.

Mr. Lyons, if I may start with you, from the Department of Agriculture's perspective, could you please give me some insight as to some of the adverse impacts that the current situation concerning the definition of wetlands has had upon the farmers and ranchers of the United States?

Mr. LYONS. Well, Senator, I think the most obvious adverse impact is confusion, frustration and downright anger about the fact that there was lack of certainty as to what constitutes a wetland; what does not constitute a wetland. I think Senator Faircloth also alluded to this. Frankly, from the standpoint of what was applied under Swampbuster, and then what was applied under section 404. That is one of the reasons we seek to provide a single authority for making determinations on the ground so as to clarify for agricultural producers that they have to deal with one agency on the ground with regard to determinations and not live under the uncertainty that a ruling made by one Federal agency may be different from a ruling made by another.

Senator KEMPTHORNE. Is there consensus that this truly has been a difficult situation for the farmers and ranchers?

Mr. LYONS. I don't think anyone could doubt that, Senator.

Senator KEMPTHORNE. If I may, Dr. Dickey, a question for you. Could you describe for me the manner in which an average American comes to find out that he or she has wetlands on their property that fall under your jurisdiction? Is the burden on the citizen to realize that he or she has wetlands and obtain a permit from you and what guidance is there when the area or the land at issue is open to interpretation insofar as it is or is not wetland?

Mr. DICKEY. There is a burden on the landowner and I think that the we have worked hard to publicize the existence of the 404 Program and the indicators, if you will, of wetlands and we are available to make jurisdictional determinations when a landowner suspects that indeed wetlands may be present.

Senator KEMPTHORNE. What guidance do you give to landowners throughout the United States where they simply may not believe that they have a wetland and yet the liability apparently is that the burden of proof is on who?

Mr. DICKEY. I think the burden of proof is in terms of the criteria that are established there and in terms of hydrology, in terms of the soils, and in terms of the vegetation. As I said, we have undertaken extensive education efforts to make available to the public information concerning wetlands. I think there is an exaggeration here of the obscurity by which one knows whether there is a wetland or not. I think it really is not that big an issue, that people are aware of the regulatory program and are aware under the circumstances where they may have wetlands on their property.

Senator KEMPTHORNE. Let me just continue that. Does a system of strict liability make sense in a context where it is not always clear to a person that the land in question is or is not a wetland, particularly where criminal penalties, fines and jail terms are imposed in some cases where the Corps dispute has been over whether the land in question is a wetland?

Mr. DICKEY. I'm not a lawyer and would like to supply something for the record on that particular question. Perhaps Mr. Wayland would like to address it as well.

Again, I think that you will find that the resort to criminal penalties and so forth is a very rare instance, that whenever there arises a case of where there has been an inadvertent activity in a jurisdiction wetland, the Corps as a matter of policy looks to after-the-fact permits and restoration as a way of handling the issue as opposed to taking court action.

Senator KEMPTHORNE. For the record, Mr. Dickey, I'm not an attorney either.

Senator LIEBERMAN. Usually that elicits a stirring round of applause.

[Laughter.]

Mr. WAYLAND. If I could just supplement that a little bit because under the Memorandum of Agreement with Army on enforcement, EPA generally takes responsibility for addressing instances where an activity has occurred without a permit which should have required a permit. I just want to emphasize Dr. Dickey's point that the criminal penalties are reserved for instances of willful and knowing violations and I think there would be relatively few questions that an uninformed landowner who destroyed a wetland unintentionally would be subject to the full weight of those kinds of penalties.

Having said that, I think that the agencies together do need to do a more effective job of making the public generally aware of the importance of wetlands and the need to determine whether they are present when undertaking the kinds of development activities that can impinge on those wetlands and that is an important element of the administration's plan, the emphasis on working more effectively with State and local governments.

I guess as a former local planning commissioner myself, I can tell you that rarely did we take the additional step of informing developers and others of potential Federal requirements and approvals that were needed in addition to those that we levied at the local level. To the extent that we can recognize appropriate local decision making which does adequately protect these resources, I think we can eliminate a great deal of that confusion and duplication.

Senator KEMPTHORNE. My time has expired. I appreciate that final comment and certainly would encourage to the greatest extent local decision-making ability.

Thank you, Mr. Chairman.

Senator LIEBERMAN. Thank you, Senator Kempthorne.

Senator FAIRCLOTH.

Senator FAIRCLOTH. Thank you, Mr. Chairman.

Since there is confusion as to different responsibilities of the levels of government and we have an array of people here that represent the various functions of government with regard to wetlands, and there are many of us that find the wetlands responsibility of each of your agencies confusing, starting with Mr. Hall, could you explain to me your current wetland responsibilities and how they differ from Dr. Dickey and the Corps of Engineers and on down through the panel?

Mr. HALL. Yes, Senator. I'd be glad to.

The National Oceanic and Atmospheric Administration and its subagency, the National Marine Fisheries Services, has responsibility for providing biological information about the impacts of wetlands loss on commercial fisheries. As I'm sure you're aware, in the south Atlantic area in your home State, we've lost about 42 percent of the commercial fishery landings and shellfish landings since 1982. There are a number of reasons for that but one of the primary reasons is habitat loss and particularly wetlands loss. Coastal wetlands are now disappearing at the rate of about 20,000 acres a year. So our responsibility is a trustee responsibility for those marine resources and protecting the Nation's fisheries.

We operate under a Memorandum of Agreement with the Corps of Engineers and EPA in which we provide that expertise and that advice in consultation with the Corps of Engineers enforcing the law.

Senator FAIRCLOTH. In other words, you would deal primarily with the brackish water?

Mr. HALL. Yes, all the estuaries.

Senator FAIRCLOTH. Dr. Dickey?

Mr. DICKEY. The Corps of Engineers essentially administers, if you will, the Permit Program. It receives permit applications, it acts on them after receiving advice from the resource agencies. It receives and acts on individual permit requests after consultation with its sister agencies and with the public under an elaborate framework that's been established there.

The Corps also issues what are called general permits which allow various classes of activities to proceed without the benefit of an individual permit. In fact, the vast majority of activities permitted under the 404 Program are under general as opposed to specific programs, about 90 percent actually.

So the Corps is essentially the administrator, the agency to whom an applicant comes for guidance with regard to individual permit-related issues.

Mr. LYONS. Senator, the Soil Conservation Service and the Department of Agriculture functions under the authority of the Food Security Act and the 1990 Farm Bill to implement the Swampbuster Program. In so doing, the agency responsible for making determinations and enforcing provisions of Swampbuster which basically allow no draining of wetlands which were not drained prior to 1985 so as to maintain their integrity.

That authority was modified by the 1990 Farm bill to provide some exemptions for minimal effects and for some modifications in the manner in which the overall determination process would work, but largely, our responsibility is to work with agricultural producers to provide for enforcement of Swampbuster.

Mr. WAYLAND. Senator, as the primary administrators of most provisions of the Clean Water Act, we look not only to section 404 for our responsibilities to protect wetlands but other provisions of the Clean Water Act as well. To concentrate, for a moment, on Section 404, the statute does vest in Army the responsibility to be the permit issuance and processing agency subject to guidelines issued by EPA in the form of regulations and called for by Section

404(b)(1). This is the overall environmental framework under which the permitting program operates.

In addition, the agency determines the extent of geographic jurisdiction of the program, determines the applicability of the 404(f) exemption for normal agricultural and silvicultural activities, and makes decisions on whether the program should be delegated through a process known here as assumption to interested and qualified States.

We, in addition, have authority to elevate for consideration within the Department of Army chain of command permits which we believe present important national issues and we can disapprove an Army-issued permit if we determine that it is inconsistent with the 404(b)(1) guidelines, an authority which very rarely has been exercised by the agency.

Mr. BARRY. Senator, the Department of the Interior and the U.S. Fish and Wildlife Service in some respects almost has the broadest portfolio for dealing with wetlands conservation of all the agencies. We have extensive nonregulatory functions as well as regulatory functions.

For almost 60 years now, the Department of the Interior under the Fish and Wildlife Coordination Act has been put in a consultative role with the Corps of Engineers to provide comments on the biological impacts of proposed activities which could affect the waters of the United States. So the Fish and Wildlife Service is involved in a consultative role in reviewing all proposed 404 permits, for instance. This is based on an old statute that came out of the 1930's, the Fish and Wildlife Conservation Act.

The Fish and Wildlife Service also has consultative responsibilities under various provisions of the farm bill and works very closely with the Soil Conservation Service in implementation of parts of the farm bill program.

In the nonregulatory programs, the Fish and Wildlife Service has been involved for 75 years in conservation of migratory birds, the acquisition of wetlands under statutes like the Migratory Bird Conservation Act for refuges, the expansion of the refuge system. The Fish and Wildlife Service has an extensive wetland restoration program under the Partners in Wildlife Conservation Program to assist farmers and other private citizens in the restoration of wetlands. We also have had an extensive wetlands mapping program going on for many, many years.

In both the nonregulatory sense and the regulatory sense, the Fish and Wildlife Service has been providing consultation and advice to the Corps of Engineers and EPA or working cooperatively with the Soil Conservation Service and has had an extensive role in wetlands conservation.

Senator FAIRCLOTH. Thank you.

Senator LIEBERMAN. Do you want to take a few minutes to continue that line of questioning.

Senator FAIRCLOTH. Yes, I would if I may.

Senator LIEBERMAN. Yes, go ahead.

Senator FAIRCLOTH. Mr. Hall, how much did you say we were losing in wetlands?

Mr. HALL. This is just coastal wetlands, about 20,000 acres a year.

Senator FAIRCLOTH. Could you have someone in your office prepare me a map going back say about 5 years delineating what we've lost and where we lost it and the number of acres?

Mr. HALL. We'd be glad to do that. The primary State is Louisiana.

Senator FAIRCLOTH. From about 5 years back. I'd like to see because I know that we are, I just would like to be able to say where we are losing it and why.

I have a question for Mr. Lyons if I may. This penalty that Senator Durenberger mentioned, it is extremely harsh and would amount to literally a taking of the property. For the average farmer, some \$25,000 a day, it wouldn't take very long to eat up a lot of farmland and a lot of timber land at that. Would you be supportive of a great reduction of that to say the value of the land or something of that nature?

Mr. LYONS. Senator, let me point out a couple of things. First of all, we also are engaged in the practice of monitoring wetlands and trends in wetland loss. The Swampbuster provisions that you allude to, I think, have had a great deal of important effect in curbing wetland loss. From 1983 to 1987, we estimate that wetlands on private agricultural lands were lost at about 120,000 acres a year. That has been curbed somewhat; down to about 41,000 acres per year. I think that is a demonstration of the value of the program.

We tackled the issue of the harshness, as you put it, of the provisions of Swampbuster in 1990 in amendments to the conservation title of the farm bill. Of course there was extensive debate in both the House and Senate about this. We adopted a provision that allowed for a minimal effects determination. That was, if an individual inadvertently converted a wetland to cropland, and it was determined looking at the entire watershed that the effect of the loss of that wetland was minimal on the integrity of wetland resources in that area, then the farmer could, through mitigation, retain the farm program benefits that he or she enjoys. So it is an issue that we have tackled in the past. I think that is an appropriate way of trying to address that, recognizing the fact that in some cases the wetland loss may not be as significant as in others.

Senator FAIRCLOTH. But you would not support a reduction in the penalty?

Mr. LYONS. Not at this time, no, sir.

Senator FAIRCLOTH. Mr. Wayland, I notice that EPA granted to a wetland watch group \$50,000 as unofficial monitors of private wetlands. These wetland watchers would snoop landowners and see if they could find or report a violation. Are you aware of that?

Mr. WAYLAND. Senator, citizen monitoring of wetland quality is actually a very valuable component of our broader Clean Water Act efforts and literally tens of thousands of citizens annually participate in efforts to try to characterize the health of our aquatic resources, particularly streams and lakes. Those efforts have been assisted through grants.

I am not aware of the particular grant that you've mentioned. We make on the order of \$10 million in grants primarily to State a year. Some of these also are also to local and not-for-profit groups. I'd be glad to try to do some further research on that for you.

Senator FAIRCLOTH. Would you get me a list of any grants you have made to other than States, to any private groups to monitor?

Mr. WAYLAND. Yes, I will.

Senator FAIRCLOTH. That gets into, in my opinion, government snooping. That becomes an intrusion upon the privacy of the public.

I don't have any further questions right now.

Senator LIEBERMAN. Thank you, Senator Faircloth.

Mr. Lyons, let me come back to some of the questions asked about the role of the Soil Conservation Service. As indicated in my opening statement, I think the recommended change to have the Soil Conservation Service be the agency which makes wetland permit decisions for agricultural lands is a sensible and necessary one, but as you know, there are critics of the proposal and I want to give you an opportunity to respond to those.

Let me just paraphrase some of the criticisms. The critics argue that the unspoken mandate of the Soil Conservation Service has been to help create more cropland, that it has a poor record in the Swampbuster Program and its field staff lacks the scientific expertise, experience or knowledge to deal effectively with the identification of wetlands. More generally, I suppose, building from all this, the strongest critics basically argue that because of the tremendous loss of wetlands due to agricultural practices that this proposal essentially puts the fox in with the hens. Why don't you respond to that series of questions?

Mr. LYONS. Well, I find myself in an interesting position, Senator, because just a year ago I was with the staff of the House Agriculture Committee and might have joined with some of those critics, but now I'm on the other side of the fence.

Senator LIEBERMAN. So you think you've grown older and wiser?

Mr. LYONS. Yes, much wiser in the last 3 months.

I would say this in all seriousness in response, it's interesting if you talk to agricultural groups about SCS. They see them as the green police and they are quite exercised about the belief that they think SCS performs too much of a regulatory function and in effect, is too aggressive in its implementation of the conservation provisions of the farm bill.

I think there is a balance there but more importantly, we have a good working relationship with the Fish and Wildlife Service and the Conservation Title of the 1990 Farm Bill strengthened that relationship and brought the Fish and Wildlife Service into close involvement in our activities related to wetlands on the ground.

In addition, we have made extensive efforts in recent years to beef up the biological expertise and capability of SCS and I think that has added to our capability on the ground to make things work better.

Finally, I'd point out that I think this proposal to bring the agencies together, to work cooperatively to come up with a common definition, a common manual for implementation, a common agreement on what constitutes a wetland helps to address the criticisms of those who say if you leave SCS out there on their own, then you do in fact leave the fox guarding the hen house because we are not going to be out there on our own. We are simply going to be the contact point for implementing a comprehensive and cohesive Fed-

eral policy which reflects an agreement on what wetlands should look like and how they should be protected. I frankly assume then that the Corps and EPA, and others, will be making the same assumptions and viewing wetlands in much the same way.

So I think this is a very, very different approach and frankly, I think that SCS is quite up to the task. In fact, I would point out that SCS over the past two decades has led the way in promoting watershed-based planning in a number of ways and as a part of our effort to lead by example, the two agencies that I work with—the Forest Service and the Fish and Wildlife Service—are moving aggressively to ecosystem management and watershed-based planning for all their activities.

I think to the contrary we can stand up to our critics and demonstrate that we have the capability and expertise and by working with our partners here at the table have the capability to do the job to protect the Nation's wetlands.

Senator LIEBERMAN. How is the relationship working under the farm bill and is it a model for what can happen here?

Mr. BARRY. I was the Department of the Interior's representative on the administration's Wetlands Task Force and when the question came up regarding the role of the Soil Conservation Service in the 404 Program, quite frankly, I turned to the Fish and Wildlife Service and expected to hear loud complaints from them. I was surprised by the response that I got from the Fish and Wildlife Service. The people in Washington told me that they have an excellent working relationship with the Soil Conservation Service, that they really have very few complaints in what they see as a changed commitment within the Soil Conservation Service toward wetlands conservation. Quite frankly, the people in the Service that I dealt with on the Task Force were very supportive of the shift to the Soil Conservation Service and the lead for the 404 Program.

As Jim mentioned, a close working relationship has evolved since the passage of the farm bill. I think the Soil Conservation Service and the Fish and Wildlife Service has established at the field level, which is really the important place, a number of cooperative links. There are a number of consultative roles that the Fish and Wildlife Service plays under the farm bill in aiding and assisting the Soil Conservation Service. The net result of all of that has been that when I turned to them and said, what do you think, can you really trust the fox in the chicken coop, the answer from the Fish and Wildlife Service folks was, you bet.

Senator LIEBERMAN. Good.

Let me ask you a question, before my time runs out, which is on a different subject and that is that the administration proposal mentions wetlands creation several times in the report as a potential option for mitigating wetlands loss. I can't recall any strong scientific testimony that it is possible to create, as opposed to the mitigation banking we were talking about earlier, a wetland. What would be your response to that? Is it possible?

Mr. BARRY. I think between the two options you may have for producing mitigation, wetland restoration or wetland creation, clearly it is much easier to try and restore a wetland than to go out and create a brand new wetland. I think wetlands creation science is still evolving and there is a lot more that needs to be done.

The Fish and Wildlife Service has an extensive wetlands restoration program underway. For instance, it's very easy to restore a lot of farmed agricultural lands, go back in, break a drain tiles and so on. Wetlands creation is much more difficult. You need to have a much more thoughtful approach to it and I think the jury is still out as to how successful it ultimately will be. It certainly is an area in which we are interested in pursuing additional research.

I think also it needs to be kept in the broader context or at least we need to keep a broader context and that is that the most effective way for preserving and conserving wetlands is to protect what we have. It's only really after a decision has been made that we can no longer avoid in a particular area or we can no longer avoid the destruction of wetlands that we then start to talk about things like wetlands restoration and creation. Under those circumstances, I think wetlands restoration is a safer, better way to go. You have a much greater likelihood of success.

Senator LIEBERMAN. So at this point, wetlands creation is an idea to explore but if I hear you correctly, we're not certain it is feasible yet?

Mr. BARRY. Well, again, it's an evolving science and I don't think we're ready to declare victory yet. It's much easier to restore a wetland that did exist in nature before and that acts of civilization have sort of altered it. You go back and you can reconstruct things frequently. In a lot of these former wetland areas, you still have seeds in the ground. You go back, restore the hydrology and all of a sudden you have wetland vegetation popping by up after a number of years.

Senator LIEBERMAN. My time is up.

Senator Faircloth, do you have any other questions?

Senator FAIRCLOTH. Yes.

Mr. Lyons, just recently a blueberry farmer in North Carolina came to me and told me he wasn't permitted to grow blueberries on his land because they were not a commodity. Therefore, they were not subject to the Swampbuster and normal agricultural exemption under 404. Why should he need a permit at all?

Mr. LYONS. Senator Faircloth, I know that blueberries are not a commodity as defined in the context of the Farm Program. I'm not sure I can address the question of the normal agricultural exemption as well as perhaps Bob Wayland might since he administers that element of the program. Maybe I should turn to Bob.

Mr. WAYLAND. I'd certainly like to have more information, Senator, and be able to follow up on this, but the Clean Water Act exemption is for normal, ongoing agricultural operations and if the intention was to take existing wetlands, waters of the United States, and convert them for purposes of growing blueberries, that would be an activity—the draining or drilling associated with that activity would require a permit. The fact that a permit might be required is not to say that the permit wouldn't be granted.

As you are probably familiar, there are about 80,000 activities a year that are authorized to take place in wetlands under the Clean Water Act, many of them under general permits. It is entirely possible, depending upon the size of the operation here, a general permit would have been possible.

If you can provide some additional particulars, we'd be glad to look further into the specifics.

Senator FAIRCLOTH. Mr. Lyons, the administration's position does not consider haying, cutting hay, and grazing, a normal farming or ranching activity. If cutting hay and grazing cattle is not a normal ranching activity, and it is abnormal, would you give me a normal one?

Mr. LYONS. I can give you a lot of normal activities, but again, I hate to do this but this issue again gets to the heart of EPA's jurisdiction and implementation of 404 with regard to the normal practices exemption, so I'll have to ask Bob to address that, if I could.

Senator FAIRCLOTH. Would you tell me if cutting hay and grazing cattle is not a normal ranching activity, what is it?

Mr. WAYLAND. Senator, if those activities are ongoing agricultural practices, they are certainly permissible under the section 404 Program. The intention in the agreement that the four agencies have recently reached on determinations of 404 jurisdiction on agricultural lands is keyed to the Swampbuster definition. Swampbuster, of course, applies its sanctions based on program or commodity crops—corn, wheat, soybeans, et cetera.

The applicability from a section 404 standpoint comes from our desire to try to reconcile the two programs. The regulation which was recently adopted as part of the President's plan exempts the same set of activities from the 404 Program as are defined "prior converted crop lands" under the Swampbuster Program. Certainly S. 1304 includes in its definition of areas which would be exempted from Section 404, haying among others.

Mr. LYONS. Senator, I believe there are exemptions for those practices, both under Swampbuster and 404. So again, if you have a specific case you would like us to address or investigate, we will certainly do that.

Senator FAIRCLOTH. Would you expect a sophisticated farmer to understand the intricate details of 404?

Mr. LYONS. Well, Senator, I would point out that this is one of the reasons that we're working together as an interagency team to try and come up with some ways to simplify the processes and to clarify for producers precisely who they need to deal with on the ground. Certainly, an additional part of this will be more information provided to producers so that they know when they deal with SCS, and that is who they are going to have to deal with on the ground, the information they need to obtain, and what practices they can and cannot engage in. That's why we're trying to change the policy, to move in a different direction and make life easier.

Senator FAIRCLOTH. That would be nice.

You would not even hint that there might be an over regulation of the activities on private land?

Mr. LYONS. I would suggest strongly there is always need for improvement in how we implement these programs. We seek to move aggressively to do that.

Senator FAIRCLOTH. How long have you been with the Department of Agriculture?

Mr. LYONS. Since May 12th.

Senator FAIRCLOTH. That doesn't give you much of a background, does it?

Mr. LYONS. I know a little bit about agriculture, Senator.

Senator FAIRCLOTH. When did the Soil Conservation Service do a 180 degree turn to the preserving of wetlands to the drainage of wetlands?

Mr. LYONS. Well, Senator, the statutory change in authority for the Soil Conservation Service occurred with the 1985 Farm Bill.

Senator FAIRCLOTH. Prior to that, they drained farmland.

Mr. LYONS. I would say prior to that, the Soil Conservation Service provided technical assistance for a whole host of activities and programs and I would say that in 1985, a significant change in policy did, in fact, occur.

Senator FAIRCLOTH. When you say technical assistance, what does technical assistance mean?

Mr. LYONS. Going out in the field and showing you how to put in drains or how to tile a field or to do whatever was necessary.

Senator FAIRCLOTH. You paid the money too.

Mr. LYONS. No, SCS doesn't provide cost-share assistance.

Senator FAIRCLOTH. Whoa. I ran 10 to 12 drag lines for 15 lines digging ditches and was paid by the ASCS.

Mr. LYONS. That's the ASCS.

Senator FAIRCLOTH. No, SCS supervised it and ASCS gave the money; it came through the same check.

Mr. LYONS. I don't mean to be technical, but that's true.

Senator FAIRCLOTH. When did ASCS stop that? When did they do the 180-degree turn?

Mr. LYONS. They still write checks.

Senator FAIRCLOTH. For drainage?

Mr. LYONS. No, sir.

Senator FAIRCLOTH. When did they stop?

Mr. LYONS. In 1985, I would say with the change in statutory direction that was provided.

Senator FAIRCLOTH. You've got some new information?

Mr. LYONS. No, sir, just a point of clarification. There was also an Executive Order in 1987 that clarified that we would not fund activities that would lead to the drainage of wetlands. So that reaffirmed the statutory change in direction that was provided in 1985.

Senator FAIRCLOTH. We talk about restoring wetlands, which is certainly an admirable direction, but the major loss of wetlands came about through the Corps of Engineers and the ASCS. The Corps of Engineers drained the majority of the Nation.

Mr. DICKEY. There is no question that the Federal programs encouraged historically the drainage of wetlands, certainly.

Senator FAIRCLOTH. Well, the Corps of Engineers is spending vast amounts of money to operate the drainage system in the Everglades.

Mr. DICKEY. To be sure.

Senator FAIRCLOTH. Millions and millions of dollars. Any plans to convert that or stop it?

Mr. DICKEY. As you know, we have authorized a major restoration project of the Kissimmee River which will undo the drainage, if you will, that occurred there.

Senator FAIRCLOTH. Well, it wasn't drainage, you just converted the Kissimmee River to channel 38, I believe was your designation of it.

Mr. DICKEY. That's right, and again, those reflect values of the past which are no longer the values of today.

Senator FAIRCLOTH. How about switching the pumps off?

Mr. DICKEY. Unfortunately, just turning off the pumps in and of itself doesn't restore the natural system.

Senator FAIRCLOTH. It would go a long way toward it, wouldn't it?

Mr. DICKEY. To some extent it may, but it also might have other untoward impacts on private property and so we proceed to do these things in the context of an authorized project with appropriate compensation to those who lose the benefits. After all, these things were done for some economic gain and people look for compensation when that service is removed.

Senator FAIRCLOTH. Mr. Dickey, Bernard Goode, do you know who he is?

Mr. DICKEY. Yes, I do, Bernie Goode? Yes.

Senator FAIRCLOTH. He said, "Even when I was in government, the wetlands program seemed wrong. I've now come to realize just how unfair, outrageous, and abusive to landowners it really is." That is a former colleague. Would you like to comment on his statement? Do you respect his honesty, integrity, or do you not respect it, or do you agree with him?

Mr. DICKEY. I certainly respect his right to have his views and I guess it is good that he has retired.

[Laughter.]

Mr. Faircloth. I'm sorry, I didn't hear you.

Mr. DICKEY. I said I certainly respect his right to express his views and I understand why he would be retired with views like that.

Senator FAIRCLOTH. You mean you fired somebody?

Mr. DICKEY. No. I said he retired and I said it's good because certainly those are not our views.

Senator LIEBERMAN. Senator Faircloth, if I might, I think we have to move on if you want to finish this line of questioning but we've got to move to the next panel.

Senator FAIRCLOTH. Thank you.

Senator LIEBERMAN. We do have to go on to the next panel. I had another question about the terms under which the administration's program calls for partial assumption of responsibility of the wetlands program under 404. Right now, as you know, Michigan is the only State to assume any responsibility. There is a lot of concern at the State level about the cost of the program and the difficulty.

I just say that by way of noting it and I would like to submit that question to you in writing and ask you to just define or explain a little bit more what you have in mind by partial assumption by the State? Mr. Wayland, do you want to try this quickly?

Mr. WAYLAND. I could do that very quickly. I think a number of States have expressed a willingness to operate a program that would address certain kinds of activities or certain kinds of wetlands. There is one mechanism, the programmatic general permit, through which that could be realized. If their intention is to progress toward full implementation of a program equivalent to the Federal program, another intermediate step would be to au-

thorize them to regulate certain activities or only certain classes of wetlands. That's what we mean by partial assumption.

Senator LIEBERMAN. So EPA would continue to exercise oversight and set some standards essentially for the delegation?

Mr. WAYLAND. Yes, absolutely.

Senator LIEBERMAN. Thank you all very much. It has been a very helpful panel and we look forward to working with you as we proceed with this reauthorization.

Senator GRAHAM. [presiding] Thank you very much, Senator. It looks as if I arrived at the end of act one and we are now ready for act two.

Thank you very much, gentlemen.

Our next panel consists of Dr. Joe Larson, Professor of Biology, The Environmental Institute, University of Massachusetts at Amherst and Dr. David Cooper, Senior Research Scientist, Department of Fishery and Wildlife Biology, Colorado State University. Dr. Larson and Dr. Cooper, please come forward.

Dr. Larson and Dr. Cooper, we very much appreciate your joining us today and we look forward to your testimony which will underscore some of the special distinctions between this issue in the eastern and western portions of our country.

First, Dr. Larson.

**STATEMENT OF JOSEPH S. LARSON, PROFESSOR OF BIOLOGY,
THE ENVIRONMENTAL INSTITUTE, UNIVERSITY OF MASSACHU-
SETTS AT AMHERST**

Mr. LARSON. Thank you, Mr. Chairman, for the opportunity to provide some scientific background on functions and values of wetlands in the eastern United States.

I'd like to open my remarks by recalling that wetland regulation and the permit process in obtaining permits for wetlands actually started 14 years before the Federal Government became involved in the 404 Program and started in my State of Massachusetts. I hasten to recognize that also the States of Connecticut and Rhode Island came in quickly after that.

The initiative for wetland regulation did not come from government bureaucrats in the various State houses but came from local towns that wanted to protect the functions of coastal marshes as nursery grounds for commercially valuable fish and shellfish and then from inland communities who recognized that wetlands were critical to reducing downstream flood damage.

Today, many of the eastern States have their own inland wetland regulatory programs; all of them have some form of coastal regulatory program; and some States have local or municipal regulatory programs. This is an area in the country where we have a lot of wetlands and we have a lot of people. It's interesting to note that the initiative came originally from the people and not from the State bureaucracy.

The eastern United States is characterized by abundant rainfall, evenly distributed across the year, and as a result, we have a great number of wetlands. The Atlantic and Gulf Coasts of the east are geologically older than the Pacific Coast and have well-developed and large coastal wetlands often behind barrier beaches and bar-

rier island chains. Large river systems and their sediments have formed major estuarine and coastal wetlands systems.

The glaciated northern part of the eastern United States is characterized by wetlands that range in size from less than one acre to many hundreds of acres. They are abundant and scattered across the landscape. In the unglaciated portion of the east, central Atlantic and southeastern States, wetlands are primarily associated with small to large river systems and artificial reservoirs.

I'd like to touch briefly on the major functions and values first, of eastern coastal wetlands. Marine fisheries are an important product of coastal wetlands in the eastern United States. It has already been noted before by one of the committee members the extent to which commercial shellfish and finfish harvested in the entire United States depend on coastal wetlands as nursery areas and as a food source.

The importance of this function is high both on a local and a regional scale. For example, in 1980, the economic value of Chesapeake Bay seafood, sport fishing and related activities was valued at about \$756 million. The same region, Chesapeake Bay produces annually 90 percent of the stripped bass harvest along the entire Atlantic Coast and that species is a species that is closely tied to the Chesapeake Bay wetlands.

In Louisiana, the multimillion dollar commercial fish in-shore shrimp industry is directly proportional to the area of intertidal wetland and losses of these wetlands are having a major effect on the fishing industry. The National Marine Fisheries Service estimated for the period of 1954 to 1978 annual fishery losses due to estuarine marsh losses at \$208 million.

Coastal wetlands do have a role to play in certain circumstances in storm damage. When coastal storms move onshore at low tide, coastal wetlands can provide a measure of storm buffering, but more importantly, and fully demonstrated by recent east coast hurricanes, coastal wetlands are areas of high risk for human habitation and development. Maintaining these wetlands in their natural state by prohibiting development is an avoidance of major individual and public financial losses.

Some comments on the functions and values of eastern fresh water wetlands. Wetlands on the streams of the eastern and southeastern United States provide natural flood storage that reduces the height of flood crests at substantial savings to downstream landowners, cities and towns. Especially important in this regard are the large wetlands positioned in the midstream on the main stem of major watersheds.

A classic example of this kind of wetland performance and flood control comes from my home State, the Charles River in Massachusetts. The Corps of Engineers did a study of the effectiveness of those wetlands in reducing flood damage as opposed to creating artificial structures and found it was more cost effective to preserve 8,000 acres of wetlands to provide prevention of flood damage valuing \$17 million a year downstream in the Boston area.

In Wisconsin, floods may be lowered as much as 80 percent in watersheds that have many wetlands as compared to those that have few wetlands. The same can be said in general about the bottomland hardwood forests of the Mississippi River. Originally,

those bottomland hardwood forests had the capacity to store flood-water equivalent to about 60 days of river discharge prior to human settlement. Human settlement and development and construction of levees along the lower Mississippi River has reduced that flood storage from 60 days of discharge to 12 days. This is one of the main reasons for flood damage in the lower Mississippi River.

Another important function of the inland wetlands is water quality maintenance. Inland wetlands act to capture sediment and remove nutrients that if not trapped or removed would degrade downstream water quality. We are particularly concerned here about the effects of nitrogen and the effects of phosphorous. An example of this role comes out of the Delmarva Peninsula occupied by Delaware, Maryland and Virginia where forested wetlands play an important role in reducing concentrations of nitrate in groundwater and surface water. The economic significance of wetlands in Chesapeake Bay in terms of water quality can be looked at in terms of what would happen if the wetlands of the streams moving into Chesapeake Bay were filled. It would cost \$926 million to upgrade the sewage treatment plants in Maryland and Virginia to compensate for the lack of sewage treatment capacity of those wetlands on the streams going into the Chesapeake Bay.

Some wetlands are intimately involved with groundwater recharge and discharge and in some parts of the country, important municipal well systems draw on wells drilled in wetlands or close to wetlands.

With regard to forestry and fish, the bottomland hardwoods of the southeastern United States are important as productive forest sites and during the flooding season are critical for the maintenance of many fish populations in these bottomland hardwood streams.

I see that my time has come to an end. I would like to conclude my summary of written testimony to say something about assessment of functions and values.

You will note in the proposals from the White House and also I think recognized in the background material of the bill produced by Senators from this committee, that the notion of a priori categorization of wetlands into high, low and medium value has been rejected by the administration and appears similarly to be rejected by the legislative proposals from this committee.

I concur in that rejection but I would also point out that we ought not to be rejecting the notion that we can identify wetlands that have particularly valuable roles and particular functions. We are already doing this by identifying wetlands under the RAMSAR Convention on Wetlands of International Importance, we already do this by acquisition of wildlife refuges.

If the administration and legislation coming out of this committee proposes that we use as an analog the information about a resource such as is encompassed in the soil maps and texts that have long been used by the Soil Conservation Service to help guide us on the limitations and hazards of usages of certain soils, if that kind of investment and categorization is being sought, that certainly I think would be supported by elements of the science community.

I thank you very much.

Senator GRAHAM. Thank you, Dr. Larson.
Dr. Cooper?

STATEMENT OF DAVID J. COOPER, SENIOR RESEARCH SCIENTIST, DEPARTMENT OF FISHERY AND WILDLIFE BIOLOGY, COLORADO STATE UNIVERSITY

Mr. COOPER. Thank you, Mr. Chairman. I appreciate the opportunity to come before you today.

The perception that the west is dry really permeates most people's thinking in the United States, and for this reason, most people have come to the conclusion that there are no wetlands in the west. This was accentuated when the National Wetland Inventory first started mapping wetlands in the west. When they started mapping wetlands in the United States, they chose some large areas in the west to map and they quickly got bogged down in the fact that there were lots of wetlands in the western United States and fundamentally they were very different from those in the eastern United States.

The west is dry. Most areas between Kansas and the Sierras in California receive less than 15 inches of precipitation. When precipitation does occur in the form of snow or water, it is seasonal. Most of the wetlands in the western United States do go dry periodically. However, the water does run off the landscape and we find that the wetlands are very important for treating water before it runs into streams and into groundwater and lake systems as well.

Because wetlands are so scarce, most States in the west have less than 1 percent of their area as wetlands. The State of Nevada has three-tenths of 1 percent. Because wetlands are so uncommon, their value and their function is accentuated even more. They are vital to wildlife; they are vital to treating runoff from partially vegetated lands and agricultural lands which are abundant throughout the west; they are important for retaining floodwaters because many times when water occurs seasonally, it occurs all at once and that provides some big problems with flood control as well.

Information about the functions of western wetlands is fairly recent in coming and to illustrate some of my points, what I'd like to do is show you a series of slides about what western wetlands look like and some of their functions and I'll summarize quickly after that. [Slide]

This is a photograph of the northern prairies of North America. What you can see here are a series of basin wetlands that we call the prairie potholes. These are formed by glaciation. They are all internally draining; there aren't streams; they are all basically isolated. [Slide]

There is another view. These are wetlands in North Dakota. They are isolated. Each one basically receives its surface water from runoff in that area. They can be connected via groundwater, however.

These don't just occur in the northern prairies but they occur in large complexes from the Gulf Coast all the way up into Canada to

the Arctic. They are called a variety of different names—playas, vernal pools, prairie potholes, et cetera.

Senator GRAHAM. Excuse me. On that last slide, could you give us an indication of the scale? For instance, the water bodies in the lower left, how many acres?

Mr. COOPER. That would be probably about 10 acres. Most of them are small.

Senator GRAHAM. Do they tend to occur in clusters such as this?

Mr. COOPER. Yes, they do. They are in large clusters. Some of them are very significant but they are scattered throughout the area—the rainwater basin in Nebraska, the playas of North Texas. They are big complexes but they are formed by different processes in each region. [Slide]

This is a closer view of one of these. You can see that most of these potholes are completely surrounded by agricultural land, the ones that are undrained at least. They are marsh complexes that are vital to waterfowl. [Slide]

This is a little closer view and you can see that they occur in between hills. These are basins that can hold a large volume of water. The value of one wetland in particular is not valuable but cumulatively, thousands and thousands of these basins provide phenomenal functioning for water retention, sediment retention, nutrient transformations, et cetera. [Slide]

The waterfowl value is very well known. Fully 60 percent of all the waterfowl in North America use these basin systems in the prairies and that is a tremendous percentage considering their small area of the United States. These kinds of basins don't just occur in the northern prairies but they are scattered throughout the arid west. This is an intermountain basin in Colorado, they occur around Great Salt Lake and many other areas throughout Nevada. Senator Reid this morning suggested that the Stillwater Marsh was a similar system and indeed, it once was. [Slide]

Some of these are dry seasonally and you have to wonder how something that can dry up seasonally can be so valuable. The point is that by drying down, they then enhance the amount of water that they can hold when larger amounts of water come. In addition, when the area dries, the vegetation created by algae and vascular plants decomposes and the nutrients are then available for the next wet cycle which are put into solution and create phenomenal productivity rivaling some of the salt marshes of the United States that are very important for waterfowl.

The second major kind of wetland in the west are what we call riparian wetlands, occurring along streams. The stream is a different system but the flood plain dominated by plants here is the riparian wetland. Some of the functions I'll just go through very briefly. [Slide]

One of them, as you can see here, is the input of organic matter into the adjacent stream system. The fish that live in these streams, particularly trout and others, feed largely on invertebrates, insects, and the insects are living on organic matter imported from the adjacent riparian wetland. So the riparian system is feeding the insects that the trout feed on and it supports the entire aquatic food chain.

Large wood like this shades the stream, provides litter input as well, particularly in the northwestern U.S. and other areas. The trees are important, not just when they are alive, but when they are dead as well. When they are dead, they fall in to the stream, get lodged together and create the actual pools and riffles that we find in many western wetlands. So these inputs of large dead wood is essential as well. [Slide]

Many of these systems can store water. This is a little lower in the basin. You can see a large meandering stream here in the foothills of the Rocky Mountains. These areas can store lots of water in the floodplain soils that can be released later on in the summer when the streams are at much lower base flow. That enhances stream flow, fishery support and the use of this water downstream by agriculturists and municipalities.

I can't stress enough the importance of maintaining the integrity of these systems, both the flood flows and the vegetation. In the past, the vegetation has been removed from a lot of these systems. Here you can see on the left bank a big stand of willows holding the stream side stable. When the vegetation is removed, the whole system collapses. There is no more input of nutrients in the form of organic matter, the stream food-chain collapses, the water quality is degraded by the input of sediment, et cetera. This is really the general case throughout the west. Many of these systems have been degraded by vegetation removal which is really dramatic. [Slide]

Many of the larger rivers fed by snowmelt flood as well or used to flood. The Bureau of Reclamation has come to the rescue of many people who were interested in settling flood plains. The importance of flooding is twofold. One is that many of the native fish in these systems would move out of the channel and into these adjacent wetlands that you can see here. This is along the Green River in Utah and in those adjacent wetlands they would find cover and food and move back into the stream in low flows. [Slide]

The diking-off of streams and the regulation of streams so that there is no more flooding have really limited the distribution of endemic fish in the western United States and the function then is lost. [Slide]

This is a picture of the Missouri River in Montana. You can see the extent of the former flood plain by the edges of the banks way back. Now the flood plain is basically the stream and it doesn't even extend as far as the cottonwood trees which are dominating this flood plain. Those cottonwood are a relic of a former flood regime. [Slide]

The cottonwoods, these plants here are really indicative of the health of the system. They are short-lived plants and they are essential for supporting birds and other animals. [Slide]

Another major kind of wetland in the west are areas that have high water tables. These are called wet meadows and many of these, as you can see in this photograph, are created by agriculture, many of them are natural, and these provide tremendous support for agriculture in the west, particularly grazing. On the right side of this photograph you can see an area that is irrigated and has been supported by water taken out of the stream.

To summarize, since my time is coming up here, the west has wetlands which are of international and certainly interstate importance. Waterfowl are using wetlands on a global scale or at least on a continental scale in this part of the world. They are moving from the Gulf Coast up through the continent's wetlands. Water is also flowing from State to State to State in floods and the water quality changes occurring one State certainly affect all the others. So there is a definite role for the Federal Government in this situation.

We know a lot about the percentage of waterfowl that use these wetlands; we know quite a bit about some of the fisheries issues and their support by wetlands and we really know very little about some of the other functions. Wetland science is just developing in the west and there are problems in really trying to value economically some of these wetlands.

Thank you.

Senator GRAHAM. Thank you, Mr. Cooper.

As indicated earlier, panel three, Congressman Don Edwards and Senator Barbara Boxer when they arrive, will interrupt the completion of panel two. I understand that Congressman Edwards is now here. Is that correct? Yes. Congressman Edwards, if you would please come forward, we would like to hear from you. I understand that Senator Boxer is on the way and perhaps by the time you've completed your statement, she will be here.

STATEMENT OF HON. DON EDWARDS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. EDWARDS. Thank you very much, Mr. Chairman and Senator Lieberman. I am really pleased to be here and thank you very much for inviting me.

I will make a few short remarks about the Edwards-Boxer bill. We have 83 cosponsors in the House of Representatives. We had about the same number last year. It has been very well received by all of the environmental groups and Barbara and I are very proud of the bill.

I am particularly concerned about wetlands, their value and the danger of losing more, because I come from California and have represented the south San Francisco Bay area for the last 31 years where we have lost so many thousands of acres of wetlands. In the State itself, we've lost 90 percent of our wetlands. Nationwide, as I'm sure other witnesses have testified, we're losing up to 300,000 more acres each year. Very clearly something should be done about it.

The bill that Senator Boxer and I have authored is a conservative bill in many ways. It is balanced and realistic and it tries to address some very real problems that exist in our national policy toward wetlands. The laws about wetlands are not clear, and the people dealing with wetlands are entitled to have clear laws. We need a better review process for the permits. There are some very serious problems in the present system. They lack consistency, the delays are intolerable, and the permit process needs to be faster. There is entirely too much emphasis on regulating and not enough emphasis on encouraging conservation. Our bill addresses these issues.

Briefly, Mr. Chairman, what we need is a scientifically based definition of what wetlands are. There is no definition. The National Academy of Science will give us their report on this issue by the end of 1994, I believe, and that will help so that we can use the same criteria when we're talking about wetlands.

The delays in acting on permits are intolerable, as I said, and the Edwards-Boxer bill provides for a fast track process so that there can be approvals or denials within 60 days.

Farmers need protection and they need clarification of how to comply with the law. Our bill provides that artificial wetlands and abandoned croplands need not be regulated, so farmers need not worry about their abandoned or unused agricultural lands. We don't think that they ought to be regulated. We do need incentive-based programs that encourage conservation. That is why it is important to fully fund the Wetlands Reserve Program and to give tax incentives to make conservation financially attractive. That's a lot cheaper for the Federal Government to do than to have to buy land or anything like that.

I'd like to point out a couple of more important issues. One that is really very important is mitigation banking. Mitigation is very useful but it needs a lot of care and caution. Often when wetlands are replaced, the newly created wetlands are not as good. In almost every case, they are not as good as the wetlands that we lost. I approve, and so does Senator Boxer, of that portion of the Baucus-Chafee bill that limits mitigation to restoration. Mitigation should only be met through the restoration, and not the new creation, of wetlands. Any restoration should be limited to the same watershed that the lost wetlands are in. We should ensure, which is not done now, the long-term monitoring of mitigation projects. Too often the mitigation is initiated and then nobody watches to see how well it is carried out.

We approve of adding provisions, which are not in our bill, for an administrative appeals process. But the administration proposal is one-sided in our view and only allows appeals for the denial of a permit. We think that the appeal should be open to all affected parties as long as they were involved in the process from the beginning.

It is very important, and let me say this once again, as I get ready to close, to provide for expediting permits. I already mentioned the fast track for small parcels in the Edwards-Boxer bill, but the administration's idea that you must get a decision within 90 days is pretty rigid. There ought to be some escape hatch for cases that are very complicated and should not be rushed to judgment.

In summary, Mr. Chairman, I thank the committee very much for the good work you're doing and respectfully request that you take a good look at the Edwards-Boxer approach. We believe that it does provide flexibility and that if the provisions are adhered to in this bill, we will stop the loss of wetlands which is inexorably taking place in our country to our dismay.

Thank you again for allowing me to come over here today.

Senator GRAHAM. Thank you very much, Congressman. I will assure yourself and Senator Boxer that the very significant contribution which you have made by the thoughtful development and

introduction of your legislation will certainly be a major part of our consideration of what to recommend to the Senate when we are at that point in the process.

Mr. EDWARDS. Thank you very much.

Senator GRAHAM. I'd like to ask this question which has concerned me. Earlier in his opening statement, Senator Lieberman made the observation that we've somewhat backed into our current Federal wetlands policy. If you look through the Clean Water Act, the word "wetlands" does not appear. This has been a program developed largely by regulatory rather than congressional initiative.

I'm concerned as we now face this frontally and try to ask some hard questions as to what does the Congress want in terms of policy as to where we should draw the line as between what is a federally appropriate area of responsibility and where responsibility for wetlands protection should be at some other level of government.

Does your bill suggest where that line should be or do you have any thoughts that might be of assistance to the committee?

Mr. EDWARDS. Mr. Chairman, we didn't think it was necessary. We think it's very clear that there is Federal jurisdiction. Certainly the wetlands affect all of the States. There should be a national policy and as is customary where there is a national issue, and perhaps even a constitutional issue, the Federal Government has the obligation to preempt where necessary.

Senator GRAHAM. So you believe that wetlands policy should be a Federal Government responsibility?

Mr. EDWARDS. I think in the Clean Water Act, as it is amended, the responsibility we have should be much more explicit. It should also regulate other ways of destroying wetlands such as dredging and trenching and things like that which are not included in the Clean Water Act now. It should be made much more explicit.

At the beginning of my testimony, I said that the people involved, the developers, farmers and others, deserve explicit legislation.

Senator GRAHAM. Congressman Edwards, we have now been joined by your colleague, Senator Boxer. Senator Boxer has caught her breath. We would be very pleased to hear from you at this time.

STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Senator BOXER. Mr. Chairman, I thank you so much.

I've been on the floor in a little battle with the Senator from North Carolina regarding the NEA. You know when you battle with the Senator from North Carolina, it's a battle, so I appreciate the fact that you would allow me to come now and give my testimony and then run back to battle.

Thank you so much for this opportunity. As you know, I've introduced S. 1195, the Wetlands Reform Act of 1993 and I'm very honored to be testifying with my distinguished colleague, the Dean of the California delegation, and I would say the conscience of the House of Representatives, Don Edwards.

We do offer a unique perspective on this issue because our State has the unfortunate distinction of having lost a greater percentage of its original wetlands than any other State, 91 percent. We realized late in the game, the incredible economic as well as environmental value of wetlands and we want to make sure we can save our remaining 9 or 10 percent and we want to make sure that the 47 percent of historic wetlands remaining in the rest of the United States gets saved. I know you share that goal.

Alarming recent estimates indicate that the Nation loses 290,000 additional acres of wetlands each year or nearly 1 percent of its remaining total every three years. These losses continue because of loopholes in the existing law. So the bill that Congressman Edwards and I have introduced will help stem that tide of wetlands destruction by establishing a national policy preserving the quantity and quality of our Nation's wetlands.

Unfortunately, Mr. Chairman, wetlands conservation is portrayed too often as a luxury that an expanding economy cannot afford. Nothing could be further from the truth. Saving our wetlands is essential for saving our economy. Wetlands play a key role in minimizing flood damage. In the summer, we witnessed some of the worse flooding in the Nation's history. Look at the \$5 billion-plus cost of disaster relief. Some say, Mr. Chairman, it will go up to \$10 or \$11 billion to address the floods in the midwest.

I will say to you that if you look at the Fish and Wildlife Service reports, flood damage is directly attributable to wetlands losses. The Service found widespread flooding in Iowa to be directly linked to the State's loss of 89 percent of its original wetlands. In Massachusetts, the Army Corps found that preserving existing wetlands in the Charles River was more cost effective and provided better flood protection than building extensive new flood control facilities. Wetlands also play an important role in improving water quality.

As we proceed with the reauthorization of the Clean Water Act—I'm so pleased to be on the committee with you—we should be aware that wetlands can control nonpoint source pollution by removing and retaining nutrients processing chemical and organic wastes and reducing sediment loads to receiving waters. Wetlands actually act as biological filters of our water supply. In addition, wetlands provide critical habitat for a wide variety of plants and animals. The wellbeing of waterfowl and other populations is tied directly to the status of these habitats.

Fisherman also rely on wetlands for their living. Fish and shellfish need healthy and abundant estuaries for spawning and nursery grounds, migration and food production. Studies have estimated the fishery value of wetland habitats to be as high as \$14 billion annually. The loss of these habitats can have a devastating economic effect. For example, Mr. Chairman, I'm told that shrimp harvests in your State of Florida have declined by more than 75 percent since the early 1980's due largely to wetlands destruction.

Based on studies done on wetlands by the Fish and Wildlife Service, the Army Corps and other agencies, we know there has been an economic analysis prepared under the direction of the School of Public Policy at the University of California-Berkeley and the analysis assigns a range of economic values to the various wetlands functions.

Using my State of California as an example, remember we've lost more than 90 percent of our wetlands, the study shows that the total annual benefit of wetlands to the State, the remaining wetlands, ranges from a low of \$6 billion to almost \$23 billion. That's the amount the State would lose annually if 100 percent of our wetlands were lost. The study also arrived at a range of permanent values of California wetlands. Those range from a lower bound of \$78 billion to an upper bound of \$286 billion.

If you apply this method of valuation to the Nation's 104 million acres of wetlands and taking the conservative lower bound numbers, we see that the Nation's wetlands are worth at least \$1.4 trillion annually. This doesn't even include the cost of permanent loss of wetlands species. It is so hard to put a dollar figure on the loss of biodiversity.

I hope that you'll agree that the economically sound approach to this issue is one that does the most to preserve those wetlands that remain. I have to say in a biased way, I believe that S. 1195 and H. 350 in the House take the most effective approach to the issue of wetlands preservation.

As Congressman Edwards has said, our bill will aid farmers and others by improving the permitting process. I want to quickly in a minute or so and then I'll conclude flag for you a couple of issues that concern me in the administration's proposed wetlands policy. You've heard Congressman Edwards' view on a couple of those.

As you know, the administration has proposed that Congress provide funds to allow for State and local assumption of Federal wetlands programs. Existing law already provides for State involvement but there are very sensible safeguards that I hope the subcommittee will retain when it marks up the wetlands bill.

The Clean Water Act provides that a State can assume administration of the Federal wetlands program if that State institutes a wetlands permitting program that is at least as stringent as Section 404. In other words, we ensure a floor of national consistency in wetlands protection. Let us not give up that. I very much favor the State and local control when it makes sense but I'm concerned about the administration's vague proposals to turn wetlands programs back to the States.

They talk about flexibility but I hope that isn't a code word for weakened protection. We cannot sacrifice the wetlands in the name of enhanced State participation. That would not be a good tradeoff for our country.

The second issue I want to flag for you is the issue of the role of the Soil Conservation Service in regulating wetlands development. I am concerned and voted against the Bond Amendment as did many of my colleagues and I see this has come up again in the administration's proposal. While I support the work of the SCS, indeed I've fought to keep them going as an agency, really they are unfamiliar with the Clean Water Act. They have a little experience in implementing the wetlands provision of the Swampbuster component of the 1985 Farm Bill but I have a serious concern.

If you look at the role of the SCS, it's really to maximize the amount of productive agricultural land. I think that makes this agency less than objective on the issue of wetlands protection. So I urge that proposal be rejected.

In closing, I would say the massive and continuing destruction of wetlands reflects not only an environmental loss but a staggering economic loss that must be stopped. I hope that I can work with you and members of the subcommittee to ensure that the wetlands bill we eventually include in the Clean Water Act represents the serious credible response that the situation requires.

Again, I thank you for your courtesy and I really look forward to working with you on this process.

Thank you very much, Mr. Chairman.

Senator GRAHAM. Thank you very much, Senator Boxer. I might refer to you as the warrior Senator as you return to the floor. I appreciate your comments as well as those of Congressman Edwards. I commend you for the obvious serious thought and attention that you have given to this issue. Having now converted that into a specific piece of legislation, it will be extremely helpful to the subcommittee and it will be a major part of our consideration as to what to recommend to the Senate in this very important area.

Senator BOXER. Thank you. Congressman Edwards and I thank you very much for fighting for a clean environment as the Senator from Florida.

[Senator Boxer's prepared statement follows:]

STATEMENT OF HON. BARBARA BOXER, U.S. SENATOR FROM THE STATE OF CALIFORNIA

Mr. Chairman, I want to thank you for providing me the opportunity to address the Subcommittee on the subject of wetlands.

As you know, I have introduced S. 1195, the Wetlands Reform Act of 1993, to protect our nation's remaining wetlands. I am honored to be testifying today with the House sponsor of that legislation, Congressman Don Edwards.

As Californians, Congressman Edwards and I offer a unit perspective on this issue. Our state has the unfortunate distinction of having lost a greater percentage of its original wetlands than any other state—91 percent. Californians have realized late in the game the incredible economic and environmental value of wetlands. But it is not too late to stop the losses, and it is absolutely imperative that we do so before we lose the last nine percent of California's wetlands or the 47 percent of historic wetlands remaining in the rest of the continental U.S.

Protecting the nation's wetlands is one of the most important issues that Congress will face as it reauthorizes the Clean Water Act this year. Alarming, recent estimates indicate that the nation loses 290,000 additional acres of wetlands each year, or nearly one percent of its remaining total every three years. These losses continue because of loopholes in existing law.

The bill Congressman Edwards and I have introduced will help stem the tide of wetlands destruction by establishing as national policy the preservation of the quantity and quality of the nation's wetlands.

We need to make it clear that not only does wetlands conservation make good environmental sense, it makes good economic sense. Too often, wetlands conservation is portrayed as a luxury that an expanding economy cannot afford. Nothing could be further from the truth. Wetlands serve a variety of valuable economic functions that we cannot afford to lose.

For example, wetlands can play a key role in minimizing flood damage. This summer we witnessed some of the worst flooding in the nation's history. I urge the Chairman and the Subcommittee members to consider the experience of the mid-west and the \$5 billion cost of disaster relief as they mark-up the wetlands provisions of the Clean Water Act. Preserving our remaining wetlands is the best, most cost-effective way of preventing more extensive flood damage in the future.

Wetlands act as natural sponges for floodwaters, thereby reducing or eliminating the effects of destructive floods. Floodplains absorb overflows from rivers, streams and lakes, as well as agricultural and urban runoff, to retain overflows and reduce rates of flows, reducing damages associated with flooding. Coastal wetlands absorb and temper the impact of storm surges as wetlands associated with barrier islands,

salt marshes, and mangrove swamps act as giant storm buffers and weather major storm events without sustaining lasting damage.

The Fish and Wildlife Service reports that flood damage is *directly attributable* to wetlands losses. For example, the Service found widespread flooding in Iowa to be directly linked to that state's loss of 89 percent of its original wetlands. Minnesota's Department of Natural Resources reports that it will cost the state \$1.5 million annually—more than the state's annual flood control budget—to build flood control projects to make up for flood control functions that are lost along with the 5,000 acres of wetlands drained in the state each year.

In Massachusetts, the Army Corps of Engineers found that preserving existing wetlands in the Charles River was more cost effective, and provided better flood protection, than building extensive new flood control facilities. In fact, the Corps found that loss of the wetlands would have caused \$17 million in annual flood damage.

Rather than building the facility, the Corps acquired a portion of the wetlands. Annual costs for the project are \$617,000 while the benefit to the Boston metropolitan area is expected to average \$2.1 million per year.

Wetlands also play an important role in improving water quality. As we proceed with the reauthorization of the Clean Water Act, we should be aware that wetlands can control non-point source pollution by removing and retaining nutrients, processing chemical and organic wastes, and reducing sediment loads to receiving waters. Wetlands actually act as biological filters of our water supplies. A study performed by the State of Minnesota found that wetlands destruction in that state have resulted in combined federal-state expenditures of \$20 million annually to deal with non-point source pollution.

Wetlands can also replenish and recharge the Nation's groundwater aquifers. Over 50 percent of our people use groundwater as a primary water source, and yet we often overlook the importance of wetlands in the maintenance of clean water supplies.

In addition, wetlands provide critical habitat for a wide variety of plants and animals. The well-being of waterfowl and other populations is tied directly to the status and abundance of these habitats. As wetlands destruction has continued, we have seen waterfowl populations plummet to record low levels. A large number of federally listed threatened and endangered species also rely on wetlands for their survival.

In addition to animals, plants and birds, fishermen rely on wetlands for their living. Fish and shellfish need healthy and abundant estuaries for spawning and nursery grounds, migration and food production. Studies have estimated the fishery value of wetland habitats to be as high as \$14 billion annually. The loss of these habitats can have a devastating economic effect. For example, Mr. Chairman, I am told that shrimp harvests in your state of Florida have declined by more than 75 percent since the early 1980's—due largely to wetlands destruction.

While many wetland values cannot be quantified, economists have clearly established that wetlands are an extremely valuable resource. Their destruction should be weighed as seriously as the loss of any other national resource. The Subcommittee must very seriously consider that weighing process. It is true that quantifying the economic value of wetlands is difficult—the value of any one acre of wetland will depend on its particular characteristics and location—but fortunately, most functions have been analyzed sufficiently to establish ranges of values. Based on studies done on wetlands located in various states in various regions by the U.S. Fish and Wildlife Service, the Army Corps of Engineers and other public agencies, an economic analysis has been prepared under the direction of the School of Public Policy at the University of California at Berkeley. The analysis assigns a range of economic values to the various wet land functions.

Using my state of California as an example, the study shows that the total annual benefit of wetlands to the state ranges from a low of \$6 billion dollars to almost \$23 billion dollars. Those are the amounts the state would lose annually if 100 percent of our wetlands were lost to filling and development.

The study also arrived at a range of permanent values of California wetlands. That value ranges from a lower bound of \$78 billion dollars to an upper bound of \$286 billion dollars.

Applying this method of valuation to the nation's 104 million acres of wetlands, and taking only the conservative, lower bound numbers, we see that the nation's wetlands are worth at least \$1.4 trillion dollars annually. These estimates do not even include some costs of wetland destruction, such as the permanent loss of wetland species and the loss of biodiversity. For many, the value of species and biodiversity, though not measurable, are worth many times more than the benefits of wetlands that can be quantified.

So it should be clear to anyone that takes the time to consider the values involved, that the genuinely conservative, economically sound approach to this issue is the one that does the most to preserve those wetlands that remain. Considering all the bills that have addressed this issue in the Congress over the past several years, I believe S. 1195 (H.R. 350 in the House) takes the most realistic, most truly conservative approach to the issue of wetlands preservation.

At the same time, this bill will aid farmers and others by improving the wetlands permitting process. As a Senator from California—the state with the dubious distinction of having lost the largest percentage of its original wetlands—I understand the need to both protect our remaining wetlands, and to provide greater certainty for farmers and developers. The bill Congressman Edwards and I have introduced will strengthen the wetland protections provided in section 404 of the Clean Water Act, while streamlining and clarifying the wetlands permitting program.

I want to take a moment to flag a couple of issues raised by the administration's proposed wetlands policy.

As you know, the administration has proposed that Congress provide funds to allow for State and local assumption of the federal wetlands program. Existing law already provides for state involvement, and even state assumption, with some very sensible safeguards that I hope the subcommittee will retain when it marks-up a wetlands bill.

The Clean Water Act provides that a state can assume administration of the federal wetlands program if that state institutes a wetlands permitting program that is at least as stringent as the section 404 program. This requirement ensures a "floor" of national consistency in wetlands protection and is vital for state assumption to work without weakening wetlands protection standards.

When the Clean Water Act was first passed in 1972, it was passed for a very specific reason: local and state efforts to control water pollution simply were not working, and Congress felt that a strong national presence was necessary to protect the quality of the nation's waters. This is not to say that state and local protection efforts are irrelevant—but historically they have been inconsistent, frequently subject to political pressure, and often not structured to take into account the national interest in clean water.

This is why I'm concerned about the administration's vague proposals to turn the wetlands program back over to the states. I am concerned that the administration policy focuses on providing greater flexibility for state and local governments, without making sure that "flexible" does not mean weakened protection standards.

We must not sacrifice wetlands protection in the name of enhanced state participation. This is why the state and federal roles defined in the Clean Water Act have been retained in the bill Congressman Edwards and I have introduced.

The second issue I'd like to discuss briefly is the role of the Soil Conservation Service in regulating wetlands development. As you know, Mr. Chairman, the administration has proposed a policy similar to the amendment offered by Senator Bond last February. The Bond amendment would have transferred all technical determinations regarding wetlands on agricultural lands from the Army Corps of Engineers to the Soil Conservation Service. Like most Senators I opposed the Bond Amendment, and I oppose the administration's proposal for the same reasons.

While I support the work of the SCS, this is an agency which is unfamiliar with Clean Water Act procedures and which does not have training or expertise to implement Clean Water Act programs.

The SCS has had some experience implementing the wetlands provisions of the "Swampbuster" component of the 1985 Farm Bill, but there is a serious concern that Swampbuster and section 404 are very different and that the SCS does not have adequate expertise to assume the section 404 program. In addition, its purpose—to maximize the amount of productive agriculture land—may put the agency at odds with the goal of wetlands protection. I therefore urge that this proposal be rejected.

Mr. Chairman, the massive and continuing destruction of wetlands reflects not only an environmental loss, but a staggering economic loss that must be stopped. I hope that I can work with you and members of the Subcommittee to ensure that the wetlands bill we eventually include in the Clean Water Act reauthorization represents the serious, credible response that the situation requires. I believe S. 1195 is such a response, and I urge the subcommittee members to give it their serious consideration.

Mr. EDWARDS. Thank you.

Senator GRAHAM. Thank you very much.

Dr. Larson and Dr. Cooper, again, we appreciate your statements. I have a few questions I'd like to ask.

Dr. Larson, in your comments, you stated that you personally opposed and therefore applauded the fact that the administration's bill as well as the bill developed by the leadership of this committee did not provide for classification of wetlands into most, least, medium value, but you also said that you recognize that there were some wetlands that deserved special attention. There seems to be some conflict between those two statements. I wonder if you could elaborate as to your thinking?

Mr. LARSON. I hope there is not conflict.

We are already putting wetlands in different classes when we designate wetlands for the RAMSAR list under the Treaty of Wetlands of International Importance. The U.S. Fish and Wildlife Service has conducted a survey of wetlands in each of its administrative regions and has, for their purposes, from the wildlife point of view, designated certain wetlands that are of prime concern. EPA exercises under 404 the ability to go out and do advanced determination of critical wetland areas for the purposes that agency pursues. So in that sense, we already are identifying wetlands that have special ability to perform certain kinds of functions.

The analog to this are the S&L maps and the texts that accompany the maps, that are produced by the Soil Conservation Service. If I'm a developer or a farmer and I'm going to go out and buy a piece of land either to put a subdivision or I want to grow corn, I'd be smart to go look at the soil maps because the soil map will tell me which crops these soils are most suitable for or, if I'm a developer, which soils are going to give me problems in terms of drainage, in terms of stability of my structure and the like. Then I will act accordingly.

That base of information is well-established in soil science and my suggestion is that we should start applying wetlands science in the same fashion. We already have indication that the wetlands on the headwaters of streams in the eastern United States are much more important for water quality improvement and maintenance than are the wetlands in the midstream-downstream section. On the other hand, from a flood control point of view, those midstream wetlands are more important than the wetlands on the headwaters.

So if I came along as an applicant for a permit, I would like to be advised, based on what science understands, on which of these flaming hoops I should expect to have to go through. I think the regulatory agencies would also be better positioned to use their resources if the priority functions in these wetlands were laid out much in the way we have addressed soils.

Another analogy would be from the forestry community. You map forests but you also attach to that an understanding of what the stocking is, what the growth rate is and then you make plans on that basis on whether you're going to convert from hardwood to softwood, whether you're go to in and create a plantation. That sort of rigorously based information frame, I think, could be very useful both in the regulated community and from the regulator side as well.

Senator GRAHAM. Dr. Cooper, your discussion of some of the particular issues facing the more arid western States and the graphics

that you displayed raised the question of assuming that the Federal Government has the constitutional reach to cover all wetlands, is it wise public policy for the Federal Government to attempt to regulate all wetlands. Would you have any comments as to what level of government based on scientific, administrative capability, political will and capacity to make appropriate public judgments should have responsibility for wetlands?

Would you agree with Congressman Edwards, for instance, in which he would say the Federal Government should have total preemptive responsibility for wetlands?

Mr. COOPER. The Federal Government provides definitely the overview for some of these international and interstate functions such as waterfowl migration, flood waters and water quality which go beyond any State's boundaries. The Federal Government must stay involved at that level.

A second issue is that in the western United States, there is only one State that even has a wetland policy. That is the State of Oregon. I don't think any other State has a policy. I'm working with the State of Colorado now using funds from EPA to help them develop a wetlands policy. We see a lot of resistance even in the State to develop a wetlands policy. They are afraid to do anything.

In a perfect world, the place to address wetland issues is regionally at a watershed level. That's the level at which you can map and understand the wetland resources that you have, determine which are the most important ones to preserve, determine where impacts have occurred and restoration and possible. At that level, you can really have some decisive action, but again, there is not a lot of activity in that regard. In Colorado, I know of three or four advanced identifications as they are called to address regional wetland issues, develop priority plans for purchase and conservation restoration plans. I've worked on all of those and there is not a lot of others coming down the line.

The States and the regional governments really need some help and some oversight by the Federal Government to make sure that there is some protection and some conservation efforts that are ongoing and to help the states get involved at an even more detailed level.

Senator GRAHAM. Either Dr. Larson or Dr. Cooper, Senator Boxer raised some concerns about the SCS and its independence to make judgments in the wetlands area. There also have been questions about the scientific capacity of SCS to make these biological judgments. I wonder if, from your experience, you'd have any comment to make on that subject?

Mr. COOPER. Can I start on that? I've thought about that quite a bit. Obviously the SCS has a big presence in the western United States.

As you heard this morning, the big switch in 1985 from helping maximize agricultural gain to becoming a Swampbuster enforcer seems like a sudden switch. It's hard for me to understand that the agency entirely can switch that fast.

On the good side, the Soil Conservation Service personnel generally have excellent relationships with farmers and I think that gives them an in to avoiding some of the controversy in dealing with the public.

Several of the controversial things, for example I'm not sure what agriculture is. Is agriculture just related to commodity crops or are they looking at the Soil Conservation Service regulating all agricultural lands—in other words, forested areas, public and private grazing lands. This would include the entire western United States and take the SCS out of the realm of croplands which is where their expertise is.

The Soil Conservation Service personnel that I work with really know very little about natural hydrologic regimes, natural plant communities that are beyond the realm of croplands. I'm not sure that they are completely capable of handling this administrative process. I'm pretty sure they could be trained to do so, but it wouldn't be a rapid transition at all. The Corps of Engineers has spent a long, long time developing the expertise to regulate wetlands.

Senator GRAHAM. Dr. Larson?

Mr. LARSON. I would not like to cast gloom over the lovefest that we saw in the previous panel between the agencies but the fact of the matter is, first of all, from a political point of view, I think that it's important that the SCS have a participatory role, not unlike that the National Marine Fisheries Service and the U.S. Fish and Wildlife Service have had in the past in the 404 Program. The SCS is very close to the commodity crop community.

On the other hand, the SCS has a very, very small biological staff and the SCS statutorily is limited in terms of what it can do to encourage research, whereas the Corps and EPA both have brought to the wetland situation, as well as National Marine Fisheries Service and the Fish and Wildlife Service, a very robust involvement in the application of scientific research and the support of research. That has not been a role of SCS.

I would suspect that it would be useful for SCS to be involved but on a cautious, perhaps step-by-step-basis.

Senator GRAHAM. One other issue that was raised particularly by Congressman Edwards was the issue of the creation of artificial wetlands or the regeneration of degraded wetlands as part of a mitigation program. What is your assessment of the experience to date in terms of efforts to either revive or create wetlands?

Mr. COOPER. I've done a lot of research into that and I can tell you that restoring wetlands is a much more successful activity, although not a lot has really been attempted so far in the west. Creating wetlands in dry landscapes requires a lot of maintenance. You have to be there to make sure that water is getting to the site, it's very expensive and it's unpredictable.

An example of the kinds of research that we've just seen, a graduate student at Iowa State University just completed a thesis looking at the restoration of prairie potholes in the northern prairie States. These are done under the Wetland Conservation Program and others. She's found that after 5 years or even more—these are restoration projects—the kinds of vegetation that we see in the communities that develop are nothing like the undrained wetlands that existed prior to that or the undrained wetlands that still exist in the watershed. So our ability to even restore wetlands is definitely not very good.

The use of a mitigation bank for mitigating impacts is certainly a lofty goal and I would encourage it on a watershed basis where we know critical wetlands have been impacted, but still the functioning of these wetlands doesn't come up to snuff for many, many years. Some of these may never come back if there have been impacts that are as decisive as we know about.

Senator GRAHAM. Dr. Larson?

Mr. LARSON. The record is quite clear. Anyone who has taken a look at the success of wetland creation—usually that's only measured on the basis of whether plants grew there or not, there's been no real ability to measure their various functions—there's no better than a 50-50 chance that you will be able to create a wetland plant community.

The frustrating thing from the science point of view is when you try to go out and learn something from that effort and it's very difficult to do because in the first place most of these sites have not been preceded by a careful determination of what the functions were that were being lost on the original wetland. Therefore, there were no design criteria for the project. There being no design criteria, there are no criteria on which to measure the success. There have been virtually no efforts to monitor what has gone on afterwards, so it is extremely frustrating to know that there are perhaps thousands of sites at which this has been tried and yet we try to learn from that, there's very little to learn except that it's a high risk operation.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Thank you, Mr. Chairman.

Dr. Larson, there's a lot of confusion about the growing season and I realize they vary, but I understand the growing season in North Carolina for wetland delineation begins in March and ends in November. That's an extremely long growing season, isn't it?

Mr. LARSON. For some wetland plants, there is no end to the growing season.

Senator FAIRCLOTH. Oh, this is the wetland plants, not crops? The growing season is for wetland plants, not the corn, soybeans, row crops?

Mr. LARSON. For some wetland plants at some latitudes, there actually is no end to the growing season.

Senator FAIRCLOTH. So then why have a growing season; what does the growing season delineate, wetland plants?

Mr. LARSON. Growing season has meaning in terms of crops.

Senator FAIRCLOTH. In terms of crops, it's too long. In terms of a cypress tree, you could add the 13th month, I guess. It keeps growing.

Mr. LARSON. Yes.

Senator FAIRCLOTH. So the growing season is for crops?

Mr. LARSON. That's the most useful and usual use of that term, the historic term. I think we're failing to communicate here.

Senator FAIRCLOTH. We are. What does growing season mean; what are we talking about? What's the growing season for corn?

Mr. LARSON. That's a different growing season than a cypress. There is a growing season for each species.

Senator FAIRCLOTH. That's a revelation, but which are we talking about?

Mr. LARSON. In what context?

Senator FAIRCLOTH. The delineation of wetlands is during a specific growing season?

Mr. LARSON. Yes.

Senator FAIRCLOTH. As set forth by the EPA?

Mr. LARSON. Yes.

Senator FAIRCLOTH. It is from the beginning of March until the end of November. If this is the wetland season, it's far too broad if we're talking about row crops, crops. If we're talking about wetland plants, of course you're right, it's year-round.

Mr. LARSON. The reason that it's appropriate to look at the growing season for the wetland plants is that the wetland plants and the soils are what are providing the functions that the wetland is performing. So if you're looking at the water quality role of wetlands in which plants and sediments are intimately involved, it's that growing season that's appropriate.

Senator FAIRCLOTH. Let me ask you another question. Would you say that all wetlands are of equal ecological value?

Mr. LARSON. I have a problem with the value. They have different ecological functions if you'll allow me to make that distinction. If by value, you're thinking of the use of value in terms of the proposals in the last Administration to put wetlands in high, medium and low value classes, I have a great problem with that because that begins to lump functions that are very different and that are performed differently in different wetlands.

A wetland in the eastern United States at the headwaters of a river system is much more likely to be important for water quality than a wetland at the midstream or at the mouth. However, if you look at wetland flood control, the wetlands in the midstream are much more likely to be highly important for that particular function than a wetland at the headwaters.

If you lump disparate functions like water quality, maintenance and flooding into one value class, there you've got some real problems.

Senator FAIRCLOTH. I'm told the single most reliable factor in making a wetlands determination is the soil of the land, yet the delineation manuals do not refer to a standard soil textbook, the so-called Soil Bible, the Soil Taxonomy. Very few Government delineators are familiar with this factor. In your professional opinion, shouldn't we require anyone who is doing wetland delineation to be versed in the soil?

Mr. LARSON. When the present soil taxonomy was published, the concept of hydric soils was not very well understood.

Senator FAIRCLOTH. When was it published?

Mr. LARSON. I can't give you the date.

Senator FAIRCLOTH. In the 1980's, 1970's or when?

Mr. LARSON. I believe it was in the 1970's. The classic distinctions that manual lays out are distinctions between organic soils and mineral soils. Hydric soils, which are the saturated soils that occur in wetlands, are both mineral soils and organic soils. Since the publication of that manual, the Soil Conservation Service and the soil experts in the U.S. Forest Service and in the Corps of Engineers have developed a very well understood definition of what hydric soils are. For each State, there is a published list of hydric

soils. These are the soils that are related to wetlands and it is a mix of the organic and mineral-based soils. I would say that someone who is engaged in wetland delineation needs to be very well versed in the hydric soils.

Senator FAIRCLOTH. The 1987 manual has sections which describe situations when "on-site inspection is unnecessary." Do you agree that prior to restricting a private property owner's right to utilize his own land, an on-site inspection should always be required?

Mr. LARSON. I think the private property owners should always have the right to insist on an on-site inspection. There are times when regulatory agencies are very willing to do a desk review and may not, on their own initiative, wish to go out, but I think the landowner always should have the opportunity to have that done.

Senator FAIRCLOTH. Do you have any feeling that we have too many overlapping rules and regulations and that some of the restrictions and constraints could be relaxed on private property?

Mr. LARSON. I come from a State and a town where we not only have the Federal Wetland Program, we have a State Wetland Program but on our own initiative, we have enacted a local wetland program.

Senator FAIRCLOTH. What State and what town?

Mr. LARSON. I'm in Massachusetts and I live in the Town of Pelham, about 1,300 people.

Senator FAIRCLOTH. That explains that.

Mr. LARSON. My own forest property where I had a woods road going through a wetland area and I bogged down wife's my four-wheel drive, I had to apply for a local permit as well as a review under the State level to make sure that my shifting that road out of the wetland was done in a way that would not harm the wetland. I am very comfortable with that. We're in a part of the country where we have a lot of wetlands and we have a lot of people.

It is curious to me. We started this business of wetland regulation 14 years before the Federal Government got involved and we seem to have been able to work out a relationship between the local, Federal and State governments so that we work pretty well on this. I would suggest that possibility is open elsewhere but it does mean that you've got to have local involvement, you've got to have State involvement and it's very difficult to come down from above and impose these kinds of things.

Senator FAIRCLOTH. Would you agree that a \$25,000 per day penalty is excessive and out of line with any reasonable realistic approach to penalizing a farmer? It wouldn't take many days at \$25,000 a day to chew up most of the farms in this country. That is what the penalty can be. Would you agree that the penalty is out of line and should be reduced to something more practical such as the value of the land involved?

Mr. LARSON. If I were a willful lawbreaker and if I had ignored successful warnings from the Corps of Engineers that what I was doing on my property was in violation of the Clean Water Act, I think that would be an appropriate level. I think the distinction has to be made, and it was touched on in the earlier panel, between the unwitting violator and the willful violator. There needs to be opportunities for the unwitting violator to undo the damage.

To that extent, that kind of penalty would probably be inappropriate.

Some of the most celebrated cases where citizens have gone to court, have been fined and jailed are from records of willful violators, repeatedly ignoring the agencies.

Senator FAIRCLOTH. Would you have any problem with codifying the fact that the penalty should be less rather than leaving it to the discretion of the Corps of Engineers or, in the case of Senator Boxer's bill, there isn't even an appeal? Would you agree to codify what stages it gets to \$25,000 a day?

Mr. LARSON. I think that might be useful.

Senator FAIRCLOTH. Thank you.

Senator GRAHAM. Any further questions?

Senator FAIRCLOTH. No.

Senator GRAHAM. Dr. Larson and Dr. Cooper, we appreciate very much your contribution. Dr. Larson, did you have a concluding comment?

Mr. LARSON. I would like to respond to your question to Dr. Cooper about the Federal role in wetlands. When you made the observation at the beginning of the day that this was an interest of yours, I wrote down a list of directions I thought that already existed.

Clearly, the Federal Government already has a mandated role under various international treaties and conventions. The Migratory Bird Treaty is well known. The Natural Heritage Convention conveys a certain Federal responsibility in some types of wetlands and the Everglades is an example.

Under the RAMSAR Convention on Wetlands of International Importance, I've been on U.S. and IUCN delegations to that convention, the United States already has accepted two obligations—one, to list certain wetlands under the RAMSAR. The second and less well know obligation under the RAMSAR Convention is the United States has the obligation to adopt national policies to ensure the wise use and management of wetlands, whether or not they are on the RAMSAR list.

I think from the international treaty point of view, there's already a broad framework in place. Clearly, the Federal Government has prime responsibility in international rivers and aquifers and in wetlands that are contributing to marine fisheries that go into international waters. The Federal Government's role, I believe, is also extremely important on interstate rivers, interstate aquifers, coastal fisheries.

If you begin to build that list and start to draw circles around the watersheds that contain wetlands that have these functions, you begin to comprise a very large part of the United States. So I would suggest that there is already a large role for the Federal Government but it is not an exclusive role, nor do I think it is a preemptive role because the whole process has to involve States and in some places, States may wish to involve municipalities.

Senator GRAHAM. There was a study in the mid to late 1980's I think done under the aegis of the Conservation Foundation which contains some recommendations as to what should be the areas of wetland jurisdiction, not as a matter of constitutional law, but as a matter of wise public administration policy, the Federal Govern-

ment should direct its attention to and the Federal Government should have a further role of encouraging States to accept and exercise jurisdiction over wetlands that fell beyond the appropriate Federal role. Are you familiar with that?

Mr. LARSON. If you're speaking of the Wetland Forum?

Senator GRAHAM. Yes.

Mr. LARSON. Yes, I was a science advisor to that activity.

Senator GRAHAM. Using that as a touchstone, to what degree would you support today its recommendations?

Mr. LARSON. I would still support those recommendations. I think one of the unfortunate events was that Forum produced a series of recommendations that truly had involved the regulated community, the conservation community and the regulators, both Federal and State. For various reasons that agreement fell apart. I would like to see that brought back together. The recommendations of the Forum, I think, are still worthy of serious consideration.

Senator GRAHAM. Dr. Cooper, do you have any concluding comments?

Mr. COOPER. I would just like to correct Representative Edwards' statement that there is not a wetland definition for the United States. There is a wetland definition published in the Clean Water Act. It is agreed to by most scientists it is accurate and can be used in the field, and it is used in the field.

Senator GRAHAM. Gentlemen, thank you very much for your contribution to our consideration of this important issue.

We have arrived at the conclusion of panels one, two and three. As previously indicated, panels four, five and six will be heard after the lunch hour. There has been scheduled one or more votes at 1:30 p.m. Based on that, I would recommend that we reconvene at 2:15 p.m. with panel four being our first topic.

Without objection, we will recess until the hour of 2:15 p.m.

[Luncheon recess.]

Senator GRAHAM. Call the meeting to order.

The hearing of the Clean Water Subcommittee of the Environment and Public Works Committee reconvenes to continue our discussion on wetlands policy.

Our first panel this afternoon will be Senator Murkowski to discuss some of the specific issues affecting the State of Alaska. As Senator Murkowski takes his place at the witness table, the Chair of the Environment and Public Works Committee, Senator Baucus is here. I'd call on Senator Baucus for any opening statement.

OPENING STATEMENT OF HON. MAX BAUCUS, U.S. SENATOR FROM THE STATE OF MONTANA

Senator BAUCUS. Thank you very much, Mr. Chairman.

I want to begin first by complimenting you for your subcommittee's extraordinary work on the Clean Water Act. These hearings have been very comprehensive, they've been insightful, they've been productive, and you've done a terrific job. I'd just like everyone to know, at least from my perspective, you've done a terrific job and I thank you.

Today's wetlands hearing marks the end of the hearing phase for the Clean Water Act reauthorization. I also hope it marks the be-

ginning of a long awaited resolution on the divisive debate over wetlands policy. Wetlands are important to all Americans. Wetlands clean our water, wetlands protect us from floods and droughts, wetlands buffer our coasts against storms, wetlands recharge our groundwater aquifers, and our commercial and recreational fisheries depend on wetlands. Wetlands provide essential habitat for waterfowl, endangered species and other wildlife. Nationwide, support fish and wildlife that generate more than \$40 billion to our economy.

Unfortunately, while wetlands are important to all of us, we have lost too many of them. When George Washington convinced Congress to build the Nation's Capital along the Potomac wetlands, there were more than 220 million acres of wetlands in what would become the lower 48 States. Since then, we have lost more than half of those wetlands. In my own State of Montana, we have lost more than a quarter of our original wetlands. Nationwide, we continue to lose nearly 300,000 acres of wetlands each year.

Section 404 of the Clean Water Act is our Nation's principal means of stemming this loss. As such, section 404 is essential to achievement of the Clean Water Act's goal of maintaining the "chemical, physical and biological integrity" of the Nation's waters.

While section 404 is important, it has many problems. It is confusing, particularly for farmers and ranchers who must figure out how to comply with section 404, the Swampbuster provisions of the farm bill. Section 404 is often full of needless delays. Applicants for permits wait for months or years for a permit decision. When a decision finally is made, the only avenue of appeal is through the equally slow Federal courts.

Section 404 is often difficult to comply with. Determining what is a wetland and whether a Federal permit is required is beyond the financial and technical ability of many small landowners. Section 404 does not adequately encourage State involvement in wetlands protection. It does not provide for adequate coordination on all levels of government.

Section 404 does not adequately protect against wetland losses. Drainage and excavation of wetlands has not been regulated under section 404. The individual permit process under section 404 has resulted in a piecemeal approach to wetlands protection and under section 404, the cumulative impacts on entire watersheds have often been overlooked.

To address these problems with section 404 and to promote the protection and restoration of wetlands, Senator Chafee and I have introduced S. 1304, the Wetlands Conservation and Regulatory Improvements Act. The four has four principal goals. First, the bill will enhance the protection and restoration of wetlands nationwide. It will enhance it. Second, our bill will make regulation of wetlands more fair, efficient and consistent. Third, the bill will make it easier for farmers and ranchers to comply with efforts to protect wetlands. Fourth, our bill will strengthen the Federal-State conservation partnership.

I believe that S. 1304 is a fair and balanced approach to wetlands protection. I'm pleased that the wetlands initiatives recently announced by the administration so closely parallel our bill.

Mr. Chairman, I look forward to hearing from today's witnesses about the problems they see with wetlands protection in this country and hearing their views on S. 1304 and other wetlands initiatives. I look forward to working with you and other members of the committee as well as other Senators—believe me, we both know there are many of them who are interested in this issue—in moving toward the legislation that assures balanced and effective wetlands protection.

Than you very much.

Senator GRAHAM. Thank you very much, Mr. Chairman. I appreciate that statement.

We are honored to have as our first witness this afternoon, Senator Frank Murkowski of Alaska. Senator Murkowski?

**STATEMENT OF HON. FRANK H. MURKOWSKI, U.S. SENATOR
FROM THE STATE OF ALASKA**

Senator MURKOWSKI. Thank you very much, Mr. Chairman.

On behalf of my senior colleague, Senator Stevens, who unfortunately had to go back to Alaska for a funeral of a very dear mutual friend of both of ours, I'm pleased to say this testimony that I'm about to give represents the consensus of our delegation.

First of all, let me thank you for the opportunity to testify. I think the commitment of the Chairman, Senator Faircloth, and others relative to the necessity of addressing the resolve of our wetlands situation with the emphasis on conservation is certainly appropriate.

Someone said, if the shoe fits, wear it. I'm reminded of the opening statements relative to the State of Montana and would ask that a list of wetland loss of all States be included in the record.

Senator GRAHAM. Without objection.

[The list referred to follows:]

Wetlands

LOSSES IN THE UNITED STATES
1780'S TO 1980'S

PRINCIPAL AUTHOR

Thomas E. Dahl
U.S. Fish and Wildlife Service
National Wetlands Inventory
St. Petersburg, Florida

*TECHNICAL ASSISTANCE AND
BACKGROUND DATA ASSEMBLED BY*

U.S. Fish and Wildlife Service
National Wetlands Inventory Group
St. Petersburg, Florida

Branch of Special Projects
Washington, DC

This report should be cited as follows:

Dahl, T.E. 1990. *WETLANDS LOSSES IN THE UNITED STATES 1780'S TO 1980'S*. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 21 pp.

**TABLE 1: WETLAND LOSSES
IN THE UNITED STATES
1780'S TO 1980'S**

STATE	SURFACE AREA (ACRES) ⁴			WETLANDS						
	LAND	WATER	TOTAL	ESTIMATES OF ORIGINAL WETLANDS CIRCA 1780'S	SOURCE	% OF SURFACE AREA	ESTIMATES OF EXISTING WETLANDS CIRCA 1980'S	SOURCE	% OF SURFACE AREA	% OF WETLANDS LOST
AL	32,544,640	485,120	33,029,760	7,567,600	5	22.9%	3,783,800	5	11.5%	-50%
AZ	72,680,320	221,440	72,901,760	931,000	9	1.3%	600,000	10	0.8%	-36%
AR	33,392,000	594,560	33,986,560	9,848,600	11	29.0%	2,763,600	12	8.1%	-72%
CA	100,183,680	1,379,840	101,563,520	5,000,000	5	0.5%	2,500,000	5	0.2%	-91%
CO	66,428,800	289,920	66,718,720	2,000,000	3	0.3%	1,000,000	18	0.5%	-50%
CT	3,116,800	88,960	3,205,760	570,000	6	1.8%	177,500	19	5.4%	-74%
DE	1,268,480	48,000	1,316,480	479,785	20	36.4%	223,000	20	16.9%	-54%
FL	34,647,040	2,831,360	37,478,400	20,325,013	21, 22, 23	54.2%	11,038,300	24	29.5%	-46%
GA	37,246,080	434,560	37,680,640	6,843,200	11	18.2%	5,298,200	25	14.1%	-23%
ID	52,906,880	365,200	53,272,080	377,000	7	0.1%	188,500	10	0.7%	-56%
IL	35,761,280	524,720	36,286,000	2,127,000	6	0.6%	1,063,500	28	3%	-85%
IN	23,160,960	65,280	23,226,240	1,500,000	7	0.3%	750,000	13	0.7%	-87%
IA	35,867,520	158,080	36,025,600	4,000,000	31, 32	11.1%	421,900	31, 33	1.2%	-89%
KS	52,515,840	133,120	52,648,960	841,000	9	1.6%	435,400	10	0.8%	-48%
KY	25,504,640	348,160	25,852,800	1,566,000	34	6.1%	300,000	35	1.2%	-81%
LA	28,899,200	2,155,520	31,054,720	1,194,500	26	0.7%	597,250	26	0.5%	-46%
ME	19,797,120	1,460,480	21,257,600	1,460,000	3	0.1%	730,000	3	0.1%	-20%
MD	6,330,240	749,440	7,079,680	1,570,000	10	1.4%	785,000	10	0.9%	-73%
MA	5,013,120	271,360	5,284,480	818,000	37	15.5%	588,486	19	11.1%	-28%
MI	36,363,520	894,720	37,258,240	11,200,000	40	30.1%	5,583,400	10	15.0%	-50%
MN	50,744,960	3,058,560	53,803,520	15,070,000	11	28.0%	8,700,000	14	16.2%	-42%
MS	30,309,120	233,120	30,542,240	577,000	11	0.2%	288,500	11	0.5%	-59%
MO	44,189,440	409,600	44,599,040	2,143,000	5	0.5%	1,071,500	5	0.4%	-87%
MT	39,185,200	887,600	40,072,800	1,970,000	6	0.2%	985,000	10	0.5%	-27%
NE	48,974,080	451,200	49,425,280	2,910,500	11	5.9%	1,905,500	10	3.9%	-35%
NV	70,328,960	416,640	70,745,600	487,350	45	0.7%	236,350	46	0.3%	-52%
NH	5,781,120	173,440	5,954,560	220,000	9	3.7%	200,000	47	3.4%	-9%
NJ	4,820,480	191,520	5,012,000	500,000	10	2%	250,000	10	0.5%	-39%
NM	77,724,800	411,440	78,136,240	28,000	10	0%	14,000	10	0%	-33%
NY	30,636,160	1,972,480	32,608,640	3,291,000	10	1%	1,645,500	10	0.5%	-50%
NC	31,283,200	2,371,840	33,655,040	11,089,500	42	33.0%	5,689,500	12	16.9%	-49%
ND	44,339,200	886,400	45,225,600	4,927,500	50	10.9%	2,490,500	51	5.5%	-49%
OH	26,251,520	130,560	26,382,080	5,000,000	52	19.0%	482,800	10, 52	1.8%	-90%
OK	44,149,760	598,400	44,748,160	2,142,500	10	0.5%	1,071,250	10	0.5%	-67%
OR	61,573,760	594,080	62,167,840	20,000	10	0%	10,000	10	0%	-58%
PA	28,816,800	497,120	29,313,920	1,221,000	10	0.4%	610,500	10, 26	0.7%	-56%
RI	671,360	105,600	776,960	102,690	57	13.2%	65,154	58	8.4%	-37%
SC	19,379,200	496,000	19,875,200	6,414,000	42	32.3%	4,659,000	12	23.4%	-27%
SD	48,611,840	698,240	49,310,080	2,735,100	59	5.5%	1,780,000	51	3.6%	-35%
TN	26,474,240	561,920	27,036,160	1,537,000	12	0.6%	768,500	12	2.9%	-59%
TX	168,300,800	2,796,160	171,096,960	15,999,700	60	9.4%	7,999,850	61	4.4%	-52%
UT	52,723,840	1,622,400	54,346,240	802,000	62	1.5%	401,000	63, 64	1.0%	-30%
VT	5,935,360	214,400	6,149,760	341,000	65	5.5%	220,000	19	3.6%	-35%
VA	25,498,240	624,640	26,122,880	1,849,000	10	7.1%	1,074,613	39, 66	4.1%	-42%
WA	42,664,320	978,560	43,642,880	1,350,000	67	3.1%	938,000	67	2.1%	-31%
WV	15,413,760	62,080	15,475,840	134,000	68	0.9%	102,000	70	0.7%	-24%
WI	34,856,960	1,081,600	35,938,560	3,800,000	69	10.6%	2,331,500	70	14.8%	-46%
WY	62,259,840	405,120	62,664,960	2,000,000	100	3.2%	1,250,000	71	2.0%	-38%
SUBTOTAL (CONTERMINOUS U.S.)	1,899,526,400	34,672,000	1,934,198,400	221,129,638		11%	104,374,314		5%	-53%
ALASKA	362,516,480	12,787,200	375,303,680	170,200,000	6	45.3%	170,000,000	7, 8	45.3%	-0.1%
HAWAII	4,112,000	3,200	4,115,200	58,800	26	1.4%	51,800	16, 26	1.3%	-12%
TOTAL U.S.	2,266,154,880	47,462,400	2,313,617,280	391,388,438			274,426,114		11.9%	-30%

NOTE: Surface area - There are some discrepancies between the total surface area of states. These differences are probably due to shifting river channels forming state borders. The area given is that presented by the U.S. Geological Survey, National Atlas of the United States, 1970.

Wetland distribution and changes vary dramatically within states dependent on both geographical and/or land use patterns.

Senator MURKOWSKI. The State of Montana shows approximately 27 percent of its wetlands as being lost. I think Senator Baucus used the figure of 30 percent. In any event, Florida has a 46 percent loss. My State of Alaska, less than one half of 1 percent has been lost.

Senator BAUCUS. Aren't there States with greater loss. Illinois on that list, isn't that close to 90 percent?

Senator MURKOWSKI. Oh, absolutely. Illinois is 89 percent loss. I think that I would certainly concede New Jersey is one of the States with a relatively small amount—no, it's 39 percent. Even New Mexico is 33 percent. My reference to, "if the shoe fits, wear it," is reflected on the realities associated with uniformity in the application of wetlands legislation and the recognition that the problem is not in my State of Alaska. The problem, as it exists, is with the other 49 States relatively speaking.

I would implore you as you reflect on my testimony to recognize that Alaska has only been a State for 34 years. As a consequence, we find ourselves in a rather unique position. I would ask that you refer to the fact sheet that is before you relative to the public lands that are already withdrawn in Alaska under the first portion which you can read at your convenience relative to the fact that 51 million acres of Park Service land is in Alaska which is 70 percent of the Park Service acreage, 76 million acres of U.S. Fish and Wildlife Service refuge are in Alaska, 85 percent of all Fish and Wildlife Service lands; 90 million acres of BLM lands, 34 percent of all BLM lands; and there are 57 million acres of wilderness designated in Alaska, 60 percent of all the wilderness designation in the United States.

If you go down to the wetlands, you'll see there are approximately 170 million acres of wetlands in Alaska; 40 percent or 68 million acres are already protected in perpetuity within Federal and State conservation units and further, wetlands cover 45 percent of the surface area of our State. So we are rather unique in that regard. Seventy-four percent of the nonmountainous areas of the State are wetlands and on the North Slope, 99 percent of the surface is wetland.

Wetland loss in Alaska is 80,000 acres, less than one-half of one percent. That is over the last 126 years. So as you reflect on this legislation, please recognize that at the current rate of development in our State, it would take about 250 years for Alaska to develop even one percent of its wetlands.

I've also provided you with a national wetland policy issue which is available to others. I would encourage you to refer to page 14 because I think it makes a reasonable case for consideration that Alaska's wetlands are well-protected. If you refer to the chart at the bottom of page 14, you'll see the Federal and State oversight requirements relative to any activity on Alaska's wetland.

At this time, I'm told that there is a meeting that Vice President Gore has consented to attend in Senator Dole's office relative to reinventing government, to try and make government more efficient, more responsive. I would ask that you reflect and the professional staff reflect as well on the oversight as highlighted in the document on page 14 because I think it fairly applies to the reality

that indeed the regulatory oversight is established, is functioning and is balanced between Federal and State.

To be specific, I'm concerned that some of the provisions in the Senate bill 1304 will simply not solve our wetlands problem in my State and in some cases, make things simply worse. I think that the Senate bill 1304 would continue the no net loss, plus it would set a long-term goal of increasing quality and quantity of wetlands. The no let loss is unnecessarily restrictive as a goal in my State of Alaska. Increasing wetlands in my State that has almost 180 million acres of pristine wetlands simply doesn't make much sense.

The bill expands the definition of fill and regulates additional activities in wetlands such as dredging, draining, building on piling and the bill doesn't solve the problem of definition of wetlands or account for wide variations in abundance, function and value. It does not account for permafrost wetlands. Clearly, when the committee was reflecting on the definition of wetlands, the application of permafrost, which is unique to my State and virtually my State alone, was not a consideration but permafrost in most cases does constitute wetlands. The restriction there under the definition means that you simply can't build on this area which makes up a significant part of the geography in the State of Alaska.

So without modification, Senate bill 1304 will constrict and you might as well say, strangle the development in Alaska by providing more onerous Federal conditions, more compensatory mitigation, more delays. It will mean less community expansion, less community facilities constructed, and less resource development in Alaska. Again, I would refer to the fact that we've only been a State for 34 years. So what we're attempting to do today, other States achieved 100 years ago without the science and technology, without the safeguards, without the regulation that currently exists.

The President's proposed wetlands policy, what about it? I think it's similar to Senate bill 1304 but it contains four significant errors which I would like to identify for the committee. The Administration policy assumes that the Wetlands Regulatory Program is working fine in Alaska. That's not true. It's not working fine. The President's Task Force on Wetlands received testimony from the delegation, from the Governor, the Native community, other residents of Alaska and industry groups and we all pointed out that serious problems were distinctly associated with the wetlands program.

The policy rejected the Alaska 1 percent rule. The Alaska 1 percent rule was simply a way to address the dilemma associated with development on an area which most of the ground qualifies as wetlands. Under the regulatory oversight of no net loss, you simply cannot get there from here in Alaska because there is no provision other than mitigation. So the 1 percent rule was to apply to all States, including Alaska with the theory that all States had already exceeded the 1 percent rule but Alaska would not. It could come up to the 1 percent rule and that's all, which seemed rather simplistic perhaps in the bureaucratic process but nevertheless was functional and agreeable with some concern on the part of Alaskans, but nevertheless, it was a way to get there from here and it seemed to be reasonable and responsible.

The President's policy rejects the 1 percent rule on the grounds that the rule would deregulate wetlands development and some 1.5 million acres of wetlands would be destroyed. That's not true. In fact, the 1 percent rule would only remove the requirement for compensatory mitigation. How can you have compensatory mitigation when you don't have anything to mitigate, because you've had no development. We've got 80,000 acres of wetlands that have been developed.

Other mitigation measures such as avoidance and minimization would remain in place. Alaska's wetlands would remain regulated by the Clean Water Act and all the existing Federal, State and local laws which we are entirely supportive of.

The President's policy, point three, would claim that potentially all of Alaska's coastal wetlands would be destroyed if the 1 percent rule were adopted. This simply isn't true. Alaska has a very effective coastal zone management program developed in accordance with the Federal Coastal Zone Management Act and the CZM program is developed specifically to protect the valuable resources of the coastal zone and sets more rigorous standards for approval than the 404 Program alone.

Fourth and last, the President's policy claims that if the 1 percent rule were adopted, it would hinder management efforts of threatened and endangered species. That's not true either. Nothing about exempting up to 1 percent of Alaska's wetlands from compensatory wetlands would interfere with any management activities required by the very powerful Endangered Species Act which we all respect. Finding a reasonable policy to allow development of a small percentage of Alaska wetlands does not equate to total wetlands destruction.

As you note, we have 170 million acres of wetlands, equal to the size of the State of Texas. Alaska has 65 million acres more wetlands than all the wetland of the lower 48 States combined. I have excluded Hawaii. In Alaska, you can find a place to build on but you might find that it is a wetland more often than not because wetlands cover 45 percent of the State, 74 percent of the nonmountainous areas of the State are wetland. On the North Slope, as I've said, 99 percent of the surface is wetland. So Alaska is completely saturated with wetlands and you might say we're all wet. I'm sure by now some of you might agree. But many of Alaska's wetlands are permafrost wetlands that very frankly have a lesser value. In areas with an abundance of wetlands, uplands are often the higher value habitat.

I'd like to show you some photographs because it's pretty hard to depict Alaska unless you've been there and recognize the realities associated with the geography and the land mass. Before I do, I have a little more here.

I'd like to reemphasize that we really don't have a wetlands problem as the problem exists in the other 48 States because our wetlands are not really endangered as a consequence of Federal and State prevailing policies and the fact that we have virtually a very small amount of wetlands that have been developed, as I indicated, 80,000 acres or less than half of 1 percent over the last 126 years. No other State in the Nation has over 99 percent of its original wetlands. In fact, no other State even comes close. California,

I'm told has lost 91 percent of its wetlands. That's nearly 1,000 times greater percentage loss than Alaska. The national average is 53 percent, 500 times greater loss than Alaska.

If you compare this with the lower 48 States where over 50 percent of the original wetlands have been lost, the lower 48 States loses over 270,000 acres per year, three times more acreage lost in one year than Alaska has ever lost. We already contribute greatly to the Nation's wetland resource. We don't feel we should bear the burden of unnecessary and unworkable wetland regulation that allows us virtually no growth at all. We do our fair share, as I've said and you have in the handout, 68 million acres of wetlands are already protected within Federal and State conservation units. They will never be developed, they are protected in perpetuity.

Let's go to the photos. Let me show you the dilemma of our problem. The large photo on the left is the one we're going to start out with. That photo shows an area 60 miles across, 23 miles north and south. That photo shows about 1,400 square miles. It shows continuously poorly drained permafrost wetlands. It shows you an area that goes on for 1,000 miles across the Beaufort Sea, the coastal plain, but it also happens to show you Prudhoe Bay where 25 percent of the U.S. oil production has been flowing for the last 18 to 20 years.

If you look at that photo you can readily see the dilemma. Not only is it wetlands, it's permafrost. To mandate legislation that would suggest that in order for any development to occur, you initiate corresponding mitigation, I implore you to reflect on the reality of where that mitigation is going to occur. You are simply going to disallow the development within the oversight of both Federal and State on any areas within Alaska that qualify as wetlands.

Let me show you a small area that is in red because that reflects on the Prudhoe Bay production and camp facilities which are enlarged on the next photo. Would you show the audience the large photo while we're working on the next one so they will know what we're talking about. That's 1400 square miles.

The Prudhoe Bay facilities are represented in that picture that Alan has before you which shows you again that is an onshore facility, not an offshore facility. That's land at the North Slope. It's mostly water though, isn't it. You have wetland as far as the eye can see. A no net loss concept would prevent, prohibit, eliminate these projects. When everything is already wet, how do you create more? In my State, where and why do you conduct compensatory mitigation? This is the dilemma we have which is unique, if you will.

Let me show you a couple of other photos as well because I think they represent a reality. What you have in the next photo is a little different because this represents the closest thing to offshore activity in the State of Alaska. It represents the Endicott Field. That field is on a gravel island offshore with a causeway and it came in as the tenth largest producing field in the United States at 100,000 barrels per day. Senator Faircloth has that and that is a BP production facility. That's an offshore facility that's not very far offshore. It's within the 3 mile limit so it really doesn't qualify as offshore.

The significance of that is it came in as the tenth largest producing field in the United States. Today, it's the sixth largest field in the United States. It's producing at about 100,000 barrels a day. That's the technology that we've been able to develop. How big is it? It's less than 60 acres. That's the kind of technology that is applicable in Alaska today. As a consequence of cost, it's not good enough to find oil, you've got to find a lot of it in order to bring it into production. How can we do that in compatibility with the ecology and the environment and that's by reducing the footprint. That's just what we've done. That would be basically eliminated because it's extended the land by the causeway.

We're proud of this technology and we think that we can add something if you will to the wetlands problem by Alaska being used as an example of how to do it right.

This represents a general tundra area in the Arctic, in the North Slope area of Alaska and represents one of the river drainages that for all practice purposes is dried up in the wintertime and flows only in the summer.

This shows the North Slope or ANWR which has received an awful lot of consideration by Congress on the merits of opening it up for a limited exploration and drilling. It's believed to be the largest potential of any major oil discovery left in North America. That's what it looks like in the wintertime and there's 19 million acres out there in ANWR. That's a pretty big chunk of real estate, bigger than the State of Massachusetts.

The proposal by industry, if allowed to develop, is to develop, if the oil is indeed there, an area of about 12,500 acres out of 19 million acres which would be the production facility. It would be like having the Dulles International Airport in the State of Virginia as the only single footprint in the State and the rest of the State were a wilderness. Those are the kind of proportions that I'm trying to communicate to my colleagues.

We'll go to the next one because this represents the same area of ANWR in the summertime. That's what those 19 million acres look like for about 6 weeks of the year.

I guess that's all the photos. So you can see what a no net loss policy means in Alaska.

In conclusion, gentlemen, the wetlands program as regulated by section 404 of the Clean Water Act simply has not worked in Alaska. We have property owners in Alaska regularly experiencing ridiculous bureaucratic nightmares and I know you folks share that as well, senseless projects, delays. We have opposition in some projects from storing snow as it accumulates in parking lots and roads without the proper 404 permitting. Of course this kind of bureaucracy in an area where you get a lot of winter snow is simply unconscionable. When you have the responsibility of representing your constituents with these bureaucratic nightmares, it grows even more frustrating.

We're faced with realities that the community growth is stymied, houses cannot be built, community facilities for basic health, education, safety and sanitation can't be built. It's true the Corps of Engineers claims that they rarely deny wetlands permits and this technically is true, but as you and I know, the Corps requires an extraordinary amount of permitting information which has been

expanding, endless requests for additional information. The average person responding to it is absolutely overwhelmed; few individuals are in a position to preserve and persevere through this onerous process. So the effect is basically the same. Denial is probably the most insidious form of bureaucracy that exists.

I've had constituents come to me and say their property has been designated as wetlands. That amounts to a taking. Maybe they had a lot or two in an industrial area in Fairbanks, Alaska. They've been paying taxes on it as a potential for industrial development and suddenly, it's determined because of the application of an interpretation of wetlands to be determined as wetlands, therefore, it's a cloud on the title, the ability to build and develop is stymied dramatically and the person is left with an appeal through his congressional representative. What I must do obviously is appeal to you for some kind of rational reason to address those realities as they exist in my State where I hate to say it, but things are different.

We have, in our Native Land Claim Settlement Act of 1971 which the Federal Government under the sanctity of the contractual commitment, gave the Native Alaskans the right to select certain lands in exchange for extinguishing their aboriginal rights to the land and the settlement was to provide for some real economic incentives for our Native people. Unfortunately, the current wetlands program prevents the Natives from developing their own selected lands. The current wetland program violates the spirit of the Alaska Native Claim Settlement Act. It also violates the spirit of the Alaska National Interest Land Claims Act. The land not placed in conservation units was intended to be available for development. Development of Alaska's abundant natural resources was the economic promise of Statehood. Those are the terms and conditions under which we accepted Statehood, that we would have an opportunity to develop responsibly our resources. I think we have done that and the reality associated with the modest wetlands development that we have, less than one-half of one percent.

So basically both the State and the Nation are being deprived of the benefit of responsible development. It is simply not right to solve or attempt to solve the lower 48 wetland problems in Alaska. We should not be held hostage by the problems and mistakes of the lower 48.

We recommend some specifics and I would encourage you to reflect on them. We think the wetlands legislation should recognize that wetlands vary in abundance, they vary in functions, they vary in value. With our 175 million acres of wetlands, much of which is abundant, we recognize much is low value, much is permafrost. There should be some priorities. Regulation should be based on the extent and proportional loss of wetlands. Alaska has nearly all of our original wetlands in tact.

Some credit should be given for wetlands that are already protected. We've got 68 million acres protected in perpetuity, 40 percent of our total wetlands are protected in Federal and State conservation units in perpetuity. Permitting should be simplified and streamlined so that the process can basically work. I'm pleased to say that we hope that the Vice President's commitment to the reinvention of government can address this. We all want it to happen,

yet we want to have responsible oversight, but by the same token, the system has to work.

Gentlemen, I can tell you, if you are on the other end of a wetland problem or wetland permitting, God help you. I would venture to say none of us could basically do it alone without hiring engineers and professional help. That's a terrible burden and a terrible responsibility to mandate on the public when it's not necessary. General permits and local government wetlands planning should be encouraged. Regulations should recognize and protect the property rights of private property owners because what we're doing here in the mandate is a taking with no repayment by the individuals. It will be interesting to see how this committee reflects on the dilemma associated with the recent floods in the midwest and the realization of reclassifying productive farmland that clearly is a wetland designation, is it a taking, do you have an obligation to make a payment to those landowners. It will be interesting to see and I don't envy you the difficulty in addressing that dilemma but it is as much a responsibility for this committee to deliberate and debate as it is in the inclusion of wetlands legislation that's workable.

Regulation should not conflict with the economic goals of the Alaska Native Claim Settlement Act and the promises of Statehood under the Alaska Land Claims legislation. The State should be able to assume the Federal wetlands program more and more and manage it in a way that makes sense in that State subject to Federal guidelines and conformance because if the State doesn't meet the Federal guidelines, obviously the realization is that the Federal Government will take it over.

Alaska needs a wetland policy that allows the continued responsible development of our abundant natural resources. We've demonstrated the ability to balance the environmental protection with resource development and the rest of the country simply has not. So let's solve the wetlands problem where there is a problem.

I thank you for the opportunity to make my extended remarks. Again, I would appeal to you to recognize the dilemma that is unique to our State. I would be happy to respond to any questions you may have.

Senator GRAHAM. Thank you, Senator.

Senator BAUCUS, do you have any questions?

Senator BAUCUS. Thank you very much, Mr. Chairman.

Senator, I think you've touched a cord that most people would agree with, namely the frustration with delays and problems with the section 404 Program. As I'm sure you know by looking at the bill that Senator Chafee and I introduced, many areas, in fact every area that you've mentioned, I would think meeting with your approval except for the one and that is the failure to have a 1 percent exemption.

For example, there are provisions in the bill which do encourage State assumption of wetlands permitting process and so forth. In addition, there are very definite time limits, 90 days within which the Army Corps must issue a permit. Beyond that, at least with respect to a lot of farmers around the country, prior converted cropland as of 1985 is all exempt, so those farmers who did convert as of that date would have no concern under the Act.

We have one stop shopping at SCS and avoids the problem that many have with going to the EPA, the Corps, the Fish and Wildlife Service, et cetera. General permits, we do expand the use of general permits in the bill. The agricultural exemption is made more clear. There are many areas in the bill that deal with the frustrations you're talking about.

I grant you Alaska is a different State and I've been up to the North Slope several times in summer and winter. It's a different part of the world, there is no doubt about it. I think a 1 percent exemption, the question that comes to my mind is, because Alaska is so big, it reminds me of the law of averages, 1 percent of something isn't very much, but 1 percent of Alaska is a lot. So we're talking about what part of Alaska. That is, is it the permafrost up the North Slope, is it wetlands down around Anchorage? There's lots of different wetlands and different characteristics of wetlands in Alaska.

I'm wondering the degree to which you could indicate to us whether some kind of Alaska provision, if that made sense to you, would have some greater effect on some parts of Alaskan wetlands as opposed to some others?

Senator MURKOWSKI. First of all, I appreciate your sensitivity and I would certainly agree that there are many aspects of the legislation which we do agree with, the one stop shopping particularly. As far as the dilemma that we're in with regard to how we address some relief for Alaska, we would like to encourage prioritization of wetlands and consideration on whatever relief formula we might come up with would be based upon that prioritization because we recognize that some areas have a higher value—a bird nesting area, an area where eagles perhaps have their nests—and to allow for development initially on the lower value wetlands I think makes sense and I think all of us would agree in our own States as we look at the wetlands application that there should be a prioritization.

What we're looking for is some kind of relief and the 1 percent gave us that relief. That would be 1.7 million acres which would be the maximum developed. You talk about that percentage out of the whole, we have 365 million acres in our state. So we don't think that is an unreasonable request because 1 percent of our total 170 million acres would be 1.7.

Senator BAUCUS. The data I have here is between January 1972 and October 1992, roughly a 20-year period, the Corps received about 4,000 wetlands permit applications for activities in Alaska. Of these, 108 were denied and the Corps issued permits to 3,017 and of the remaining 872 applications, they were either withdrawn or otherwise inactivated.

I wonder if you could tell me generally in what parts of Alaska were those wetlands permits generally denied and where were they generally granted?

Senator MURKOWSKI. It's pretty hard to tell you specifically but I can generalize with a good deal of accuracy and say all over. It can be an individual's driveway from their home which is located perhaps by a river up to the highway. The application is the vegetation, the water content, any number of considerations. If there is a rivulet coming down a mountain and within so many hundred

yards, you happen to build a school and that rivulet flows into an anadromous stream within so many hundred yards and that flows into salt water, that place where you're going to build the school may be on a mountaintop as it was in Juneau and be denied as a consequence of it being in violation of the Clean Water Act under the 404 permitting process.

Senator BAUCUS. What I'm really getting at though is on the North Slope, I'm just curious if any oil company applications for 404 from the tundra up the North Slope been denied or not?

Senator MURKOWSKI. It goes a little further than that, Senator Baucus because as you know, this legislation would require mitigation. The problem you run into is what do you mitigate? Do we have to force Alaskans to go down to California and buy some wetlands—buy an area in wetlands that have been developed and turn it into its natural state so that we can develop something in our State when we have nothing left to mitigate? That's the dilemma really.

Senator BAUCUS. Is that what has happened?

Senator MURKOWSKI. What we have as a consequence of Federal and State policy is to try and initiate mitigation in those areas where we have had modest development. Let's say there is an oil pad on the North Slope that's dry, it's mitigated, it's going back. If you apply your legislation or the administration's legislation, we simply are left without mitigation capability. We have to go someplace else under the letter of the law. That's the major dilemma and I think that's where we part in how we get there from here because there is a lot of your legislation that we can live with that we can work with.

Senator BAUCUS. I understand. Indulge me with one final question. I'm just trying to get some information here. Have applicants in Alaska been forced to restore, mitigate wetlands in other States to compensate for wetlands that have been filled say in Alaska?

Senator MURKOWSKI. The problem is very complex because there is a delay factor here. If you have a major project in the North Slope, the permitting, there's over 44 permits that have to be granted. Development can take as long as 5 years and that is a reality associated with the development of the Kuparak area which is an oil producing area. You're talking about a sophisticated industry with the technology and the engineers to address the realities associated with the economics of whether they are going to go ahead and fight this process for 5 years based on their anticipated return of the resource vis a vis the mom and pop that suddenly have had a couple of lots in the industrial area in Fairbanks where Fairbanks grew up and why did it grow up in wetlands, because it was along the river and that's where the initial development occurred and where the town is because it's level. That's where the railroad is because it is level. You can't get permits. The time, the cost of obtaining those permits, many people just go away in frustration.

Senator BAUCUS. I totally agree and the main thrust of this bill is to address that issue. The Corps of Engineers submits to this committee data which says that in Alaska from January 1, 1991 to June 30, 1993, only two percent of permits required mitigation. Is that accurate or is that inaccurate, in your view?

Senator MURKOWSKI. The point is under the interpretation of the law, there is a mitigation requirement. There is some flexibility in the Corps' interpretation but less and less all the time because there is fear of a suit being filed and many suits are filed challenging the Corps interpretation. So the Corps is becoming more and more skittish. They are doing a better job on the environmental impact statements and that's fine for industry that can meet those requirements but the average person that's got to try and get a permit to put in a driveway and has to hire an engineer to provide the plans and specifications just because his or her particular land addresses water solubility—you have the same problem in your State and I know you do in Florida and other areas and that is why the one stop shopping I think makes a lot of sense.

I think there is an awful lot of this, Senator, that we can work out but where we are left high and dry in wetlands is on the application of mitigation and I would implore you to try and work with us to help us put some kind of responsible structure that we can proceed in our State because if you do it uniformly, we're out of business.

Senator BAUCUS. I hear you. I'm just trying to ask questions to determine how we can put this together because Alaska is different, there is no doubt about it.

Thank you very much.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. Just sitting here doing a little arithmetic, you only have 5 million acres in all of Alaska in private hands?

Senator MURKOWSKI. That's correct.

Senator FAIRCLOTH. Assuming some sort of governmental agency controls or owns all the rest?

Senator MURKOWSKI. That's correct.

Senator FAIRCLOTH. They cannot develop it as they see fit, I assume that's right. They don't have to let public lands be developed if they don't want to?

Senator MURKOWSKI. That's correct but recognize that not only is it not likely to be developed, a lot of it cannot be developed because it is wilderness.

Senator FAIRCLOTH. But even if they allowed any development on it, it would be an infinitesimally small percentage. If every inch of the privately owned land was wetlands, it would only be 1.4 percent.

Senator MURKOWSKI. I believe the Senator is correct, yes.

Senator FAIRCLOTH. If every inch of it was wet. I think it is ludicrous for us to pass a law or rule or regulation to constrict the growth of a 34-year-old State and apply the same rules that apply to those that have been developed over many years and other wetlands. I have a totally different feeling on the entire wetlands issue. I think it is a weapon, a tool that we have placed in the hands of an entrenched bureaucracy that penetrates three or four different agencies that all sing to exactly the same tune, to gain further control over private property and the abuse of private property rights.

I think if the wetland issue wasn't there, they would pick up the dry land issue or there would be an issue because there is a concerted attempt on the part of the bureaucracy to get control of pri-

vate property, one way or another. I think the wetlands is the current issue.

I know you might not even know but was there not an attempt to stop and to stop a homeless shelter in Juneau because it was on wetlands? Are you familiar with such a story?

Senator MURKOWSKI. Yes, that's St. Vincent de Paul Shelter. It was delayed over 2 years even though the land immediately around it had modest development on it. We've had several of those. We had another one in Sweitser Creek in Juneau, a middle school delayed for 2 years because of an EPA concern, even though it was on the side of a mountain. That was the interpretation of wetlands I spoke of where a drainage area came down the hill near the school, just a little creek, no fish at any time, dried up in the summer but flowed, but it flowed eventually into an anadromous stream within 3 miles from the location which flowed into salt-water and that qualified this mountain site for the school as wetlands.

So what we've got here is clearly something that I'm sure wasn't legislative intent in the definition but when you pull all the spaghetti out, you find you can't build there because of this series of coincidences, all well-meaning, but in my particular case, impractical because we have in southeastern, as you know, mountains that go right down to the sea. It wasn't designed for that, it was designed for more the application of a flatter topography.

I just want to make one other comment. I think it's interesting to note that in none of our discussion—you touched on it, I mentioned it—but there is a concern in the committee I think for the realization of these classifications on private land which amount to a taking and what kind of an obligation this committee has as well as this Congress to address that reality as you look at your wetland and Clean Water legislation pending.

Senator FAIRCLOTH. It is absolutely cause for concern with me. We must have hundreds of thousands of people out here agitating and working and in the bureaucracy to protect wetlands. If we have one solitary soul with an interest in protecting private property rights, he hasn't spoken within the Federal Government. That was part of the Constitution.

Senator MURKOWSKI. I haven't heard him either.

Senator FAIRCLOTH. If he's here, he sure hasn't said much.

Senator Baucus keeps saying you can get the permit. I am confident that Exxon knows how, has the time, the people, the engineers, the environmentalists, the hydrologists, to get a permit. Poor Farmer Brown can hardly find his way to the courthouse to file a deed and he is far from being able to file for a permit with the Corps of Engineers and the EPA. If he doesn't get the proper permits, he is subject to a \$25,000 a day fine which would probably consume the value of his farm before breakfast.

All these people are saying the same things from whatever agency they represent. They read a common statement this morning, a common statement from five government agencies. A Dr. Larson from Amherst, Massachusetts sat exactly where you are and told me that there was no difference in the value of wetlands, it all had the same value, whether it was 50,000 acres of brackish

marsh or a quarter of an acre pothole isolated in a field. Of course he was from Massachusetts, so I understood.

[Laughter.]

Senator FAIRCLOTH. I hope, before this wetland issue is settled and goes to the White House to be signed, that somewhere some common sense for the protection of property rights and the people of this country will be written into the bill as well as the protection of wetlands.

Senator GRAHAM. Senator, we appreciate your very thoughtful presentation and I can assure that your comments will be given full consideration as we proceed with this legislation.

Senator MURKOWSKI. Might I ask the Chairman the general time frame under which you anticipate further hearings and a mark-up?

Senator GRAHAM. This is our final hearing. This is the eighth hearing that we've had on this legislation. Our schedule is to have a bill ready for subcommittee mark-up in October and depending on when this session of Congress recesses, possibly to have it before the full committee prior to that recess.

Senator MURKOWSKI. I don't want to suppose something that's not there, but if the members and more specifically the subcommittees are receptive to considering some kind of—I hate to use the word exception—redress for our particular set of circumstances, might we have the opportunity to be afforded the courtesy of that knowledge and perhaps the opportunity to try and work with the subcommittee in addressing some responsible relief?

Senator GRAHAM. Yes. We look forward to working with you and your colleagues and whatever representatives of the State and citizens of Alaska are interested in pursuing what might be some reasonable recognition of your special circumstance.

Senator MURKOWSKI. May we do that by contacting your Chief of Staff?

Senator GRAHAM. Yes.

Senator MURKOWSKI. I very much appreciate that, Senator Graham, Senator Faircloth, Senator Baucus and the professional staff associated with this. I assure we in Alaska are not at all inclined to abuse the realities associated with responsible wetland reclamation. We just have this unique reality where our State is already wet and it is pretty hard to be any more wetter than wet. That's why the mitigation in the administration's proposal and Senator Baucus' proposal leaves us with such a dilemma.

Thank you very much for the opportunity to address the committee.

Senator GRAHAM. Thank you very much, Senator.

Panel four, I would ask if the members of this panel would please come forward and you will be called upon in the order in which you are listed on the agenda starting with Mr. Scott Hausmann, Chairman, Association of State Wetlands Managers, and Chief of Water Regulations for the Wisconsin Department of Natural Resources; Mr. Langdon Marsh, Executive Deputy Commissioner, New York State Department of Environmental Conservation, also representing the National Governors Association; Mr. Mark Latch, Division Director, Florida Department of Environmental Protection; and Mr. Ken Bierly, Wetlands Program Manager, Oregon Division of State Lands.

Gentlemen, I appreciate your participation today and I appreciate your patience. First, Mr. Hausmann.

STATEMENT OF SCOTT HAUSMANN, CHAIRMAN, ASSOCIATION OF STATE WETLAND MANAGERS, AND CHIEF, WATER REGULATION, WISCONSIN DEPARTMENT OF NATURAL RESOURCES

Mr. HAUSMANN. Thank you for the opportunity to present the following comments on behalf of the Association of State Wetland Managers and the Wisconsin Department of Natural Resources.

The Association of State Wetlands is an organization comprised of professionals from local, State and Federal agencies and private consultants which has as its primary interest the protection and wise management of the Nation's wetlands. Our comments and recommendations are based on over 16 studies, workshops and symposia conducted by the Association since 1989 which collectively involve several thousand State and local wetland managers, wetland scientists, Federal agency staff, developers and other participants.

Wisconsin has a well-founded reputation and tradition of environmental protection. Wisconsin has strongly supported the Clean Water Act and the section 404 Program believing the program complements our State and local regulations and provides comprehensive protection to Wisconsin and the Nation's valuable water resources.

We believe that Senate bill 1304 is the first serious bill to build upon and address deficiencies in the section 404 Program. The bill will do much to implement the recommendations of the National Governors Association and the concepts put forth by the Association. It is also consistent with the ideas and recommendations of the scientific and technical communities which we represent.

Both the Association and Wisconsin strongly support wetland protection and restoration. However, we have also recognized that wetland protection and restoration require the understanding and the support of public and private landowners and the protection of the quality and quantity of water supplies of wetlands through watershed approaches.

We recognize that the bill raises issues with the environmental community with regard to general permits, enhanced State and local roles, advanced planning, prior converted wetlands, mitigation banks, and perhaps other matters. We believe that these topics must be approached with great care but we also believe that after 21 years with the section 404 Program which really does not protect many wetlands, it is time to try some new partnership approaches and to better address landowner needs. These are keys to actual protection and restoration of wetland ecosystems.

Today, in addition to providing general support for 1304, I'd like to briefly address seven areas of this legislation and close with some thoughts on wetlands, this bill and flood damage reduction.

First, the specific authorization for State and local programmatic general permits clarifies uncertainties about general permits under current regulations. The Association strongly supports the use of programmatic permits where the State or local program meets or exceeds Federal regulatory standards. My State, Wisconsin, is now

entering into its eleventh year with the State program general permit.

Second, State conservation plans as proposed is a very positive, proactive approach that can initiate useful changes to managing wetland resources, especially when combined with wetlands and watershed management plans.

Third, for reasons discussed in a brief paper attached to this testimony, advanced planning in the watershed context of the sort encouraged by this bill is needed to help resolve many of the severe problems and conflicts in the protection and management of freshwater and estuary wetlands now facing the Federal agencies, States and local governments. Such planning is needed to meet private and public landowner and developer needs for more certainty, predictability, flexibility and lower costs in wetland regulation.

Fourth, while the Association supports timely decision making, the inadequacy of many of the permitting applications presently submitted raises some concerns on how this provision of the bill will be implemented. We would strongly recommend that language be added to make sure that the 90-day time clock does not start running until adequate information to assess the impact of the proposed actions is in hand.

I would add as the Senator from North Carolina has said, I would like to have my property looked at in person before a regulatory decision is made. You have to realize though that I'm from the State of Wisconsin and 6 months of the year, all you are going to see is a blanket of white stuff out there.

Fifth, we support the intent of the Agricultural activities section of the bill. However, we believe that the existing provisions for prior converted wetlands should be maintained. Also the ability of the Soil Conservation Service to carry out this mandate in terms of resources and expertise is questionable. Training of SCS at the county level is absolutely critical to make this provision work.

Sixth, the Association supports the requirements for the establishment, use, maintenance and oversight of mitigation banks relying on practical and scientifically sound methods. However, the bill does not, but should include the explicit sequencing language as now found in the 404(b)(1) guidelines and as recommended by the National Governors Association and this Association. This is critical for the appropriate use of mitigation banks. Also, we question the creation of wetlands as an effective mitigation technique.

Seventh, the funding mechanism provided in the bill includes section 104, 106, 205, 319 and 604. These funds have become increasingly competitive as they are used to support multiple Clean Water Act programs. Congress must be willing to financially support the excellent intentions of this bill.

The Association and the Association of State Floodplain Managers recently conducted the first of two meetings in St. Louis on post flood recovery and restoration of Mississippi River flood plains and wetlands. The second meeting will be September 27th to the 29th and I invite you and your staff to attend.

Many provisions of this bill—State wetland plans, watershed management plans, programmatic general permits, and mitigation banking—will be important tools to accelerate the restoration and protection of open wetland, bottom land, backwater, prior convert-

ed and flood plain areas important to water retention and release of floodwaters.

As an illustration, a 5 percent increase in riverine wetlands in Wisconsin and Minnesota would reduce the floodwaters to the south by 1.5 billion gallons a day or a 20 percent decrease in flow.

In summary, we believe this bill will help create an effective national wetland regulatory program that is integrated with other Clean Water Act goals and programs. It will achieve this by creating new Federal, State, and local partnerships to evaluate, plan and regulate wetlands on a watershed basis as part of broader water resources systems.

Thank you.

Senator GRAHAM. Thank you very much, Mr. Hausmann.

Mr. Marsh?

STATEMENT OF LANGDON MARSH, EXECUTIVE DEPUTY COMMISSIONER, NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Mr. MARSH. Thank you, Mr. Chairman.

I've had the privilege of working with the National Governors' Association and was chair of the NGA staff working group that developed the wetlands policy endorsed by the governors in February 1992. I'm testifying today on behalf of the NGA and the State of New York.

I'd like to start by saying how pleased we are by the provisions of Senate 1304 and commend Senators Baucus and Chafee for drafting and introducing the bill. We are proud at NGA and in New York to have helped develop the recommendations that are reflected in this bill. We are also pleased that the policy recently released by the White House is consistent with the direction of this bill. With the administration and the Senate so closely aligned, we are optimistic that progress in wetlands protection can be made.

The governors have recommended that any wetland strategy incorporate five general principles. First, protection efforts should be coordinated to make the best use of scarce resources and minimize inconsistencies among Federal, State and local programs. Second, wetlands management should be integrated with other resource management programs such as flood control and nonpoint source pollution. Third, wetlands delineation criteria and policies should recognize significant regional variance in the resource.

Fourth, land use regulation is traditionally a State and local function and a wetlands regulatory program should be designed to facilitate State assumption.

Finally, the governors believe there should be recognition of the unique situation encountered by the State of Alaska as Senator Murkowski so eloquently testified.

As States, we are reassured that Congress recognizes that State and local governments can be partners and viable players in wetlands protection. States are better positioned than the Federal Government to provide program services. In addition, they can often respond to the regulated community in a more timely and predictable manner. Of course the abilities and interests of the 50 States and the thousands of localities vary considerably but States and

local governments should be encouraged to participate to the extent that they can.

We're aware that some parties to the debate are wary of stronger State and local involvement, fearing that a loss of wetlands protection will result. This will not be the case. We welcome a strong Federal framework and close cooperation to ensure a strong program, but it is likely that States and localities that choose to become involved will do so to strengthen protection or to improve the delivery of the program. Consistent Federal oversight will ensure that wetlands do not fall victim to local politics in the future.

We also welcome provisions of Senate 1304 that endorse programmatic general permits, support and fund State comprehensive wetlands conservation plans and regional watershed-based plans and ensure State representation on the Interagency Coordinating Team. I note, however, that the bill is silent on program assumption. While most of the problems with assumption are regulatory and not statutory, we strongly recommend authorizing full or partial program assumption. States should be permitted to assume discrete and clearly identifiable portions of the section 404 Program as they develop the capability to do so rather than requiring the entire program to be delegated at one time.

We're pleased to note that many provisions of Senate 1304 will decrease the conflict that has historically occurred between wetlands protection and agriculture. Provisions to increase coordination with the Secretary of Agriculture, for example, should prevent problems from occurring by considering the impact of new policies on agriculture early on. We support exempting from the definition of wetlands prior converted croplands and certain artificial wetlands created incidental to agriculture. We also support continuing the exemption for ongoing agricultural practices.

In addition, we're pleased that Congress has chosen to expand the wetlands reserve program supported by us and the White House policy to create a national cooperative wetlands restorative strategy. We recommend, however, that the restoration strategy complement and not replace the Wetlands Reserve Program.

Perhaps the types of provisions that will be most welcomed by the majority of the affected public will be those that provide for regulatory reform. NGA and we in New York have supported efforts to make the regulatory process fair, reasonable, and predictable, believing that the vast majority of the people prefer to comply with wetlands protection efforts if they can understand what is required and expected of them. We have recommended some of these changes in the past and are pleased that they appear in the bill. They include reasonable time lines for permit review, establishing an administrative appeals process, and supporting mitigation banking.

Senate 1304 also strengthens wetlands protection and endorses the no net loss goal, clarifies the definition of wetlands, expands the list of activities subject to jurisdiction under 404, and more clearly defines what is fill. We do believe that watershed-based planning for wetlands also will greatly enhance wetlands protection in the long term. My colleague from Oregon, Ken Bierly, will be speaking in more detail about watershed and local wetlands

planning but I want to express my strong support for these provisions in the bill.

I understand that local and regional wetlands planning has been characterized by some as an effort to weaken rather than strengthen wetlands protection. I cannot disagree more. Absent a context for wetlands decision making, we will continue to see cumulative losses and will not have the proper perspective for functional assessments and mitigation.

In spite of our enthusiasm for Senate 1304, we are disappointed that the bill does not contain explicit language governing sequencing of mitigation requirements. We believe it is critically important, first, always to avoid impacts to wetlands, then to minimize any impacts that cannot be avoided, and finally, to offset any remaining impacts through compensatory mitigation such as restoration or creation of wetlands.

Without an explicit declaration in the statute of these sequencing requirements, we fear that too often the process will jump to compensatory mitigation when in fact the impact may have been avoidable altogether.

We do believe some flexibility must be available which is best defined through watershed or regional plans but we strongly urge that sequencing be followed whenever possible.

In closing, I'd like to reiterate that we are encouraged by the similarities between Senate 1304 and the White House wetlands policy. I urge Congress and the administration to continue this cooperative approach and to aggressively seek to move wetlands protection forward out of the morass of conflict that has consumed it for the past several years.

On behalf of New York and the other States, we welcome the new spirit of cooperation and partnership with the States and look forward to helping deliver a stronger wetlands program.

Thank you.

Senator GRAHAM. Thank you very much, Mr. Marsh.

Mr. Latch?

**STATEMENT OF MARK LATCH, DIVISION DIRECTOR, FLORIDA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

Mr. LATCH. Good afternoon. My name is Mark Latch and I'm the Director of the Division of Water Management in Florida's newly created Department of Environmental Protection.

The Department is the lead State agency for permitting activities impacting waters and wetlands in the State. At the present time we are seriously considering State assumption of the Clean Water Act section 404 Permit Program. For these reasons, we are specifically and very specially interested in reauthorization of the Clean Water Act, especially the activities relating to section 404.

Florida has an extremely active wetlands permit program at the present time based on regulation of wetland impacts in the dredge and fill program and regulation of the management and storage of surface water. The authority of these two programs is split between my department and five regional water management districts.

Recently, we have entered into interagency agreements and there has been legislation that has resulted in the first steps

toward streamlining these regulatory programs into a single, decision making process and, in addition, developing a Statewide, single wetlands delineation methodology. The intent is when the streamlining process is completed, an applicant will deal with a single agency for all wetland permits required under State law.

To further the streamlining initiative, the State has requested and received funding from EPA to investigate the feasibility of assuming the section 404 Program. In the process, we are working on that grant to see whether or not we want to develop an assumption package.

However, based on the work that we have done to date under that grant, we have found that a State programmatic general permit may be a much more attractive alternative for the State than the assumption process. Given the current statutory restrictions that we have found in the Clean Water Act, it is just not possible for us to develop an assumption package for a comprehensive, statewide program such as Florida's.

An attempt to address some of these concerns and possibly to remove some of these impediments, we have proposed language to the Florida delegation to amend the Clean Water Act. The detailed language is contained in my written statement but I'll outline some of those things here.

One, there is currently a provision that specifies that certain waters are not assumable. In Florida's case, that's approximately 50 percent of the wetlands and waters. We would recommend that language be modified so that all waters in the State could be assumable.

There is another provision that restricts permits under an assumed program to a 5-year period. Currently, our program in the State allows for 25-year permits with 5-year reviews. The Corps of Engineers issues very similar permits. We would like to see an amendment that would allow this practice also to be done.

There is another provision in the Clean Water Act that requires all permits that are pending at the time an assumption is done to go immediately to the State taking the program. This means both complete applications and incomplete applications. We feel that would be an undue burden on the State at that point in time and cause much confusion both with the State and with the applicant. We think it should be changed so that the State could get those applications that are received after the date of assumption and the Corps would finish off the processing of those that they currently have in-house. In addition, we would recommend language clarifying that the Corps of Engineers would retain authority to administer and enforce the permits that they have issued.

Also, there is no provision under the existing statutory language for financial incentives for the State to assume the existing Federal program. Shifting costs of this program from the Federal budget to the State budget will undoubtedly result in a substantial reduction of Federal costs and an increase in State costs with no offsetting revenue. Therefore, we would recommend language that would allow grants to the State for at least the initial part of the start-up until this problem can be addressed.

These amendments would go a long way toward making assumption of the section 404 Program more attractive to Florida and

other States. Given the experience of Florida and other States that have considered assumption, we would suggest consideration be given to this language for clarifying the relationship between the Federal and Endangered Species protection statutes and the State-assumed section 404 Program.

Protection of the endangered species has a major emphasis under the existing Florida program. However, should we assume the section 404 Program, we are concerned that current Federal statutes and policies may result in excessive Federal agency coordination burden on the State with no increase in endangered species protection.

I thank you very much for the opportunity to comment on this. I'd be glad to take any questions. I have a more comprehensive version of my remarks that will be attached and you can get the specific language we are suggesting there.

Senator GRAHAM. Thank you very much, Mr. Latch.

For the benefit of the members of this panel as well as others who have or will testify today, full statements will be accepted for the record and if you would like to supplement your statement within the next 15 days, the record will remain open to do so.

Mr. Bierly?

**STATEMENT OF KEN BIERLY, WETLANDS PROGRAM MANAGER,
OREGON DIVISION OF STATE LANDS**

Mr. BIERLY. For the record, my name is Ken Bierly. I am Wetlands Program Manager for the State of Oregon, Division of State Lands.

It is a pleasure to be here before you with the opportunity to speak about regulation of wetlands under the Clean Water Act. I would like to bring a State perspective to this issue and my comments are based on more than 20 years of direct experience with the State program.

Oregon has had a State legislatively mandated permit program prior to the passage of the Clean Water Act in 1972. Our direct experience with a command and control approach to wetlands regulation might provide some insights as you deliberate on changing the structure of the Clean Water Act.

The first realization that came to us after some years is that a permit program does not protect wetlands. We need to be very clear about that. A permit program can protect some wetlands from some discharges, but it does not protect wetlands in the landscape. It cannot and does not look at which wetlands should be protected. It is entirely a reactive program.

Additionally, that inherent structure means that the Federal Government, under the Clean Water Act, reacts to someone's desire to place fill in a wetland somewhere in the universe. The program is structured around a reaction to someone else's desire to destroy a wetland. So the permit program is inherently defensive and it creates a defensive reaction because people typically don't indiscriminantly place fill for no reason, primarily because it is expensive to move dirt.

People have legitimate reasons for placing fill and it is for this reason that we feel that the planning approach, watershed man-

agement planning, or other forms of planning that provide a context for regulatory permitting is extremely important.

In preparing for these remarks, I reviewed the General Accounting Office's recent review of the 404 Program. They reported that Congress has increased funding for the Corps from \$55 million to \$86 million in the 4 years between 1988 and 1992. Even with that level of increase in Federal funding, the problems identified in 1988 which had to do with cumulative impacts, lack of tracking, et cetera have not been resolved. This is an issue where additional Federal funding is not necessarily the solution. I am convinced that there is a more fundamental problem. The problem that we faced in Oregon and that I see with the Federal program is that no matter how well you administer a permit program, it will not achieve broad-scaled wetland protection objectives unless the permit program is changed into an implementation mechanism for a broader wetland resource planning program.

You must additionally establish goals for the program and 1304 does clearly establish goals for the program. Senate 1304 takes important steps in recognizing these shortcomings of the permitting program. Section 3 provides explicit goals for the program that have been long needed and broadly discussed. Many people have agreed upon the explicit goals stated for the program.

Section 12 allows wetland and watershed management plans to be developed to provide a context for the 404 permitting. I believe that the wetlands and watershed management planning aspect of this bill is a necessary element of the program. It provides the opportunity for local communities to be empowered to define solutions within Federal guidelines to solve problems locally. I think it is important that we understand that bottom-up approaches will be inherently longer lasting, more durable and quite likely be more creative than top-down approaches.

S. 1304 starts to address the need for partnerships. In sections 3, 4, 7 and 12, partnerships with State, local government, private property owners, and other individuals are addressed. This is a breath of fresh air. The partnership approach, I am personally convinced, has much power within a defined framework.

S. 1304 also explicitly addresses the need to integrate the Clean Water Act Program with agricultural programs, particularly sections 7 and 8. The lack of Clean Water Act recognition of SCS/USFWS minimal effects determination has been a plague that is being addressed in S. 1304. The integration and explicit recognition of the need to integrate the Department of Agriculture programs under the "Swampbuster" provisions of the Food Security Act with Clean Water Act programs is a very clear need.

EPA's recent brochure on how 404 affects farmlands is a useful piece of public information that should be emulated. In Oregon, \$3 billion annually is generated by our agricultural economy, so in the agricultural sector of the community, it is extremely important to maintain their productivity as well as maintain protection of wetlands.

I would also like to talk to you about another approach that is important to us in Oregon and throughout the west. I think it's important that nearly 100 years ago, Captain John Wesley Powell was before this body and indicated that watersheds were where it's

at, all water ends up, comes from a watershed and goes through the watershed. We must look at water and water resources within their natural context.

Unfortunately, we failed to listen to John Wesley Powell when he was director of the U.S. Geologic Survey and recommended that county boundaries be structured around watersheds. We have local government boundaries and State boundaries that run across watersheds and are trying to treat water as if it were pork bellies or other things that could be traded on the open market. We're starting to realize that we can no longer do that. If we look at how the wetlands fit within the watershed, we may be able to develop priorities for those wetlands that make sense to local people and the Federal Government.

I've provided detailed comments in my written testimony and would be glad to answer any questions.

Thank you.

Senator GRAHAM. Thank you very much, sir.

Mr. Hausmann, you talked about the fact that one of the positive features in this legislation was the concept of State conservation plans. That sounded very much like some of the comments that were made later about the desire to shift this program from being a reactive permit program to something that was more futuristic and positive in its orientation. Could you elaborate on your feelings of that? In light of some comments made by an earlier panel where there was stated resistance to the concept of classifying wetlands, would that not be an inherent part of a State conservation plan?

Mr. HAUSMANN. Let me approach the classification portion of that question first. Classification is something that we're doing every day. I run a permit program, Mark Latch runs a permit program. Every day in effect, we are making a value judgment. We are classifying a wetland; we are saying yes, this is something that we believe we can issue a permit to allow a wetland to be altered in some form or manner. So is there classification, are there value judgments going on? Yes, there are.

However, if you asked me could I implement some type of classification scheme and mapping for the State of Wisconsin, I would tell you there is not enough time or money in this world to do it. To do it on a national basis would be even more of a nightmare.

Having said that I have very negative feelings, obviously, about classification and trying to do it on a State basis or a national basis, I do believe that we do need to do it in certain problem areas within every State. That's what I look at wetlands conservation plans or watershed plans to be able to do, to look at areas that we can handle with existing staff and expertise that we have and I'm particularly thinking of those trouble areas, those areas that either have some unique natural feature that makes them hard to interpret or hard to deal with. In Wisconsin, we have what we call red clay areas. The soil is red clay, nothing percolates through it so everything on top of it by hydrology and plant species is wetland. We also happen to have a major port city of the United States, Duluth-Superior, sitting in this landscape.

Issuing permits on an individual basis there is a very difficult and contentious task. We are now in the process of doing a watershed plan which is identifying and classifying wetland areas that

are up for development, in the next 10 years, and making the permit decisions ahead of time, and determining what is going to be required in that area. So that's one area where classification can be done.

The other place I think that it can be done is where you are having development pressures, areas that are rapidly developing. Those areas can be done in the watershed plan or a watershed context. They can combine Federal, State and local interests and private and public interests into a plan.

The process of trying to classify wetlands on a State or a national basis, I'd look at as an impossible task but in a watershed plan or a local plan context I think it's very, very capable of being done and it is something that we have to do. It is a much needed direction.

Senator GRAHAM. The question that has concerned me is whether it is wise policy to have the Federal jurisdiction over wetlands be defined as the totality of wetlands or the full reach of the Federal Government's constitutional capacity. It has been suggested elsewhere that there should be a clear demarkation between the Federal jurisdiction and then with States having the responsibility to decide how to regulate those wetlands which were beyond the Federal jurisdiction.

I'd like any comments that any of you might have on whether there should be a single Federal jurisdiction that is all inclusive or some dividing of the wetlands?

Mr. MARSH. I'd like to take a crack at that. I believe that it is important to have a strong Federal framework for the wetlands management in this country. Because we did not do as John Wesley Powell suggested and organize ourselves along watersheds as opposed to artificial boundaries, we do have a problem of inter-jurisdictional management of resources that are common resources. I think having a strong and comprehensive Federal framework for resource protection, in this case wetlands, makes a great deal of sense.

However, I believe and we have testified I think fairly uniformly here that we would like to see as much as possible that the mechanics and implementation of that Federal authority be delegated to, assumed by the States to the extent that we have the capacity and resources to do so, and that will allow us to have the flexibility through these regional and regional watershed planning mechanisms as well as the comprehensiveness that resource requires.

Senator GRAHAM. Any other comments to my question? This will be my last question for this round.

Mr. HAUSMANN. If I may interject briefly, it's my understanding that Congress debated that very issue in 1977 when there was questions about the extent of what constituted navigable waters and there was a bill from I believe a gentleman from Texas who indicated that the regulation at the Federal interest was limited to traditionally navigable waters. The balance there was States would assume those other waters at that point in time.

Senator GRAHAM. I am prepared to accept the argument that the Federal Government has a constitutional reach that is broad enough to encompass virtually all wetlands in the United States. I'm really asking a different question which is the wisdom of utili-

zation of that reach. Mr. Marsh I think made some persuasive arguments as to why it is wise to have the maximum Federal jurisdiction. Would anyone else like to comment on that as a matter of wisdom rather than law?

If not, Senator Faircloth?

Senator FAIRCLOTH. I would totally agree with what you're saying, turn the inspection over to the States and allow them to have some authority to do it. I see a problem with that. I don't remember in my lifetime a Federal agency ever reducing itself or giving up jurisdiction. I missed it if one ever did. So if you put the States in charge, you're still going to have the Feds sitting there, so you're adding another layer of bureaucracy to take your permitting process through. That is what I'm afraid would happen.

I notice that Mr. Latch said that the Feds should fund it. Did I understand what you said?

Mr. LATCH. No, sir, not in totality. I don't ever see that happening. What I'm saying is that right now, for most States to even consider it, they are going to need something to give them a jump start, at least in the initial phases as they go into the transition.

Senator FAIRCLOTH. Do you think they are going to reduce their program to jump start yours?

Mr. LATCH. I agree with you, sir, I've never seen anyone reduce, so it's probably not realistic.

Senator FAIRCLOTH. You think we need more spending?

Mr. LATCH. I'm just saying there needs to be some incentive for the States to take it. At the present time, there isn't much of one.

Senator FAIRCLOTH. Where would you suggest we get the money?

Mr. LATCH. I don't know that I have any real good ideas for that, sir.

Senator FAIRCLOTH. Mr. Bierly, you said that the permit is a reaction, not a good system. In a word, what would you replace the permit system with?

Mr. BIERLY. It would be difficult to replace it in a word.

Senator FAIRCLOTH. Just a very few words.

Mr. BIERLY. The system that I anticipate is that the permit is an implementation instrument. It implements someone's idea of how you get from A to B. What we see as an appropriate governmental structure would be a planning mechanism done by local communities that integrates wetlands within the infrastructure of the community and then the permit becomes the implementation mechanism once the plan identifies what areas would be filled, what areas would be restored, so there would be predictability in the system and you would have a very good idea of what the outcome of a permit system would be before you even enter it.

Senator FAIRCLOTH. In a word, would that not be total assumption of private property rights?

Mr. BIERLY. No.

Senator FAIRCLOTH. What would it be?

Mr. BIERLY. In fact, our experience in Oregon is that what it would do is allow the voices of private property individuals more control over the establishment of community goals and assignment of direction for their future. My experience has been that the people who own property have a very strong role in making sure that those goals are achievable and realistic.

Senator FAIRCLOTH. The interpretation I usually get of things when we start dealing in individual personal property rights and community goals, that closely becomes the taking of personal property.

I thank you.

Mr. HAUSMANN. Senator, can I add a comment? You asked for an assumed program where you might get money?

Senator FAIRCLOTH. Yes.

Mr. HAUSMANN. This is just an idea and I've never seen an agency give up things either, including my own, but it certainly makes sense to me that if my State were to assume the permitting program from the Corps of Engineers, that some portion, some percentage of the money that they use to run that program in a State could be given to that State to run that program at least on a seed basis until the State legislature acts to fund the program.

For example, the Corps of Engineers spends close to \$2 million a year to run the program in the State of Wisconsin. I can guarantee you that if there was an offer of 50 percent of it, \$1 million, my legislature would probably be giving me directions to assume the program from the Federal Government.

We did a study of the feasibility of assuring the S. 404 program in Wisconsin, completed in 1990, and the one major reason that we did not go ahead and assume the section 404 Permit Program was lack of funding. Every other Clean Water Act Program that the State of Wisconsin has taken on has come with funding, including the Discharge Permit Program, Nonpoint, et cetera. The only assumable program that does not have any funding, other than study grants, is the section 404 Clean Water program.

Senator FAIRCLOTH. I can give you the Corps of Engineers' answer now. We are underfunded as it is. Our programs have been cut, our budget has been cut. We hardly can survive. We would be glad to give some authority to the State of Wisconsin but no money.

Mr. HAUSMANN. I've heard that answer already from the Corps.

Senator GRAHAM. Mr. Latch, you talked about the similarities or differences between an assumption program and the programmatic general permit program. Could you elaborate on what are the practical differences or similarities between those two and why you feel the general permit might be a preferable way for a State to move into this area?

Mr. LATCH. The biggest problem right now is that you can only assume, as I said in my prepared remarks, about 50 percent of the program. In Florida, we would only be able to assume isolated wetlands, headwater wetlands. We would not be able to assume any permitting authority in rivers, major lakes or the coastal areas.

Senator GRAHAM. Is that because the 404 regulations restrict assumption?

Mr. LATCH. That is correct. It says that you cannot assume navigable waters, any waters that are susceptible to navigation or can be made to be navigable with improvements. There's some real funny language on it. In Florida, as you know, that's most of our State in large part; that's probably 50 percent or more of our permitting load. So then you have a fragmented program right there.

Under the State programmatic general permit, you negotiate with the Corps of Engineers for taking over whatever portion you want. It's a lot more open-ended. We've opened discussions with the Jacksonville office of the Corps and we're proceeding under that guise.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. What is navigable water?

Mr. LATCH. That's one of the questions and the Corps makes that decision. They have to tell us what it is and that's another problem that you get into with defining where the navigability stops in the river. So you have to undergo these real extensive studies to find where the St. Johns River is no longer navigable. It becomes a morass that I just frankly cannot recommend—

Senator FAIRCLOTH. I'm not talking about the St. Johns River, I'm talking about the St. Lucy Canal and everything else. That's navigable water.

Mr. LATCH. We would presume so but the Corps would have to tell us that.

Senator FAIRCLOTH. In other words, it is all navigable water?

Mr. LATCH. Up to where you probably can't take canoes and things like that. It just depends upon how they define it and how they want to get out and do their studies. So, like I said, it becomes a nightmare trying to make that distinction.

Senator FAIRCLOTH. You're in charge of the water division in the Department of Environmental Protection?

Mr. LATCH. Right.

Senator FAIRCLOTH. And you don't know of a stream, you can't even identify a ditch that isn't navigable water in the State of Florida?

Mr. LATCH. Sir, you asked me what I thought was navigable and I don't have a good definition for that.

Senator FAIRCLOTH. All right.

Senator GRAHAM. Several of you have identified the principal restraints on greater State assumption of responsibility whether it be through a delegation or through general permits, et cetera. How well do you feel the legislation that has been introduced would deal with the mitigation of those restraints on State assumption? If the legislation that Senators Baucus and Chafee have written were to be the law today, how would that affect your recommendation to your State as to whether it should assume the program?

Mr. MARSH. As I testified, Senator, I think the one area of improvement that I would see would be the spelling out that a partial assumption could take place of either geographic area or a part of the program in terms of certain types of wetlands or some other partial assumption that would be commensurate with the ability of the State and its resources to do the job well.

I think there also needs to be some attention paid to some of the issues that Mr. Latch has raised in order to make sure that assumption could be as broad as possible. What we're pushing for is to make it as easy and as effective to transfer that first line authority from the Federal Government to the States as possible, commensurate with a firm Federal oversight to make sure that all the States are doing it equally well.

Senator GRAHAM. Let me ask one follow-up question relative to that oversight. One of the criticisms that I think has come from the State of Michigan which I believe is the only State that has assumed is that oversight is on a case-by-case basis, so you are in the situation that you're always subject to Monday morning quarterback on each individual permit. Is that an accurate description of that? If that is accurate as to what the current oversight is, how would you suggest the oversight ought to be?

Mr. MARSH. This is an ongoing concern of States with Federal oversight in a variety of programs and generally what States prefer and we would prefer in this case as well, is that the oversight be of the effectiveness of the program to undertake and accomplish the objectives of the program and have a review or post-audit or something of that nature to make sure that the permits that have been issued are consistent with the terms of the assumption or the State program general permit or whatever the mechanism is, and that be reviewed on a periodic basis and a decision then made whether to continue the delegation or assumption, withdraw it in part or take some other action which might include, for a period of time, permit by permit review until the State could again demonstrate that it was doing the job correctly.

As the baseline type of review, we'd prefer a much more stand-offish one that looked at the general accomplishment and effectiveness of the program.

Senator GRAHAM. Senator Faircloth?

Senator FAIRCLOTH. I have just a brief and somewhat theoretical question. Particularly Mr. Latch and the State of Florida, I'm not as familiar with some of the others, all of you have people sitting on land that are paying heavy ad valorem taxes on it with the assumption that it has some intrinsic value and that they have property rights to it. Is this not right, they are paying pretty heavy ad valorem taxes on it? At what point, when they ask for a determination of whether it's wetlands or not, or if they ask for this determination in view of an inheritance or in view of a advantageous sale to a child or whatever, they ask for this review and you declare it wetlands, they might encourage you to declare it wetlands, then it's value drops from what it is on the tax books at from \$4,000, \$5,000 to \$10,000 an acre, whatever it might be whether it's in Sumter, Hardee, or Palm Beach, to \$50 an acre because it's worthless. If you declare it wetlands, what good is it? What can they do with it? Maybe it's growing trees but that's probably likely Australian pine or whatever. So it's worthless. How does the county cope with that loss of ad valorem tax when that is, in the case of 99 percent of the counties in the country, the principal source of income?

Mr. LATCH. Senator, you've identified one of the major problems that we've been wrangling with in large portions of the State, especially in some of the counties that you were talking about—Palm Beach, Dade, Broward County—where a lot of the land that hasn't been developed is in fact wetlands.

We've been working with the Corps of Engineers, EPA and some other areas to do the advanced identifications and to try to identify areas that can be developed, to identify wetlands that can be impacted and we are in the process right now of trying to establish mitigation banks even within these areas to work with these areas

to identify areas that can be developed, those that if they are developed, we'll work to figure out some way to mitigate under the Federal and the State policy. So it's a very difficult situation as you said and there isn't an easy solution that we have found. We are trying to work with the counties, with the cities and with the landowners to try to figure a way around this.

Senator FAIRCLOTH. If I owned land in Palm Beach or Broward County today, I'd call you tomorrow and tell you to come identify it as wetlands. I'd sell it on an advantageous sale to my child at \$50 an acre and hoped the law changed and some common sense came back into the policy a few years down the road.

Mr. MARSH. Senator, I think you're getting indirectly at the question of taking. I just wanted to clarify that the governors have wrestled with this in their statement.

Senator FAIRCLOTH. They wrestled with it. Who won?

Mr. MARSH. I think everybody wins because we have a long tradition in our country of being able to take these kinds of questions where there is a potential diminution of value to the point of no value at all, to the courts and to get a judgment as to whether or not a taking has taken place. That has been the consistent result in our State. We have not had those kinds of problems, although we've had a wetlands statute on the books now for nearly 20 years, with a direction that says that the local assessor must take the burden of the wetlands' regulation into account in making an assessment. We have not had those kinds of problems that you mentioned. In fact, there have been a few cases where the landowner has been able to demonstrate that the burden of the wetlands regulation is such that it constituted a taking. So there is a mechanism in place, we believe, and the governors agreed with that to handle these kinds of extreme situations.

Senator FAIRCLOTH. You're talking extreme situations, I'm talking about ordinary situations. Have you hired any lawyers lately?

Mr. MARSH. Yes.

Senator FAIRCLOTH. It took your salary to pay them, didn't it if you had anything more than a speeding ticket. How many ordinary, small landowners, citizens, farmers, do you think have the resources to hire a legal firm, an engineer, MIA appraisers, hydrologists, to prepare a case to present against the plethora of Federal agencies, plus the U.S. attorneys with unlimited governmental funds, to fight that or take a case to court? How many people do you know? BP can, but the average property owner is devastated. He doesn't have a prayer or a chance to bring it and not only that, if he wins, the amount of the reward he might receive, although the government loses and he wins, is consumed by the preparation of the case in his attorneys' fees. Certainly in the case of him winning and the government losing, they should have paid the cost of his suit. Would you recommend that as a Federal policy, that if in the case of a suit the Federal Government loses, they pay the attorney fees?

Mr. MARSH. I think it is the case in some circumstances. I'm not sure I would recommend it in all.

Senator FAIRCLOTH. Tell me which ones you'd recommend it.

Mr. MARSH. I think in cases where there is clear government oppression.

Senator FAIRCLOTH. How do you know it's a clear government oppression? A lot of people think the whole wetlands issue is government oppression.

Mr. MARSH. It's up to the courts to decide that too.

Senator FAIRCLOTH. Thank you.

Senator GRAHAM. Gentlemen, thank you very much. This has been a very instructive discussion and I appreciate your bringing the State perspective to bear on this issue.

Thank you very much.

Panel six consists of Mr. Bob Szabo, Executive Director, National Wetlands Coalition; Mr. Dean R. Kleckner, President, American Farm Bureau Federation; Dr. Doug Inkley, Director, Biodiversity Conservation Division, National Wildlife Federation; Mr. Ted R. Brown, Vice President and General Counsel, Arvida Company; Mr. Kevin Martin, President, Soil and Environmental Services, Inc.; and Mr. Dan James, Federal Affairs Representative, Pacific Northwest Waterways Association.

Gentlemen, we appreciate your participation in our hearing today. As I indicated to the previous panel, any statement that you would like to supplement for the record will be received and the record will stay open for 15 days after today's hearings.

Mr. Szabo?

STATEMENT OF ROBERT SZABO, COUNSEL, THE NATIONAL WETLANDS COALITION

Mr. SZABO. Mr. Chairman, thank you for letting us appear today. I am in fact the counsel to the Coalition and not the executive director.

The Coalition is a cross-section of the regulated community that is affected by this program. I won't go through the litany of the importance of wetlands. That has been pointed out to you and we agree that wetlands are very important. However, we also agree that this is a difficult program for several reasons.

First, I think the program evolved more than it was designed by Congress. Second, more often than not, in fact the Fish and Wildlife Service says 75 percent of the time, the program regulates privately owned property. Because of that fact, there is an incredible dilemma that Senator Faircloth and you have gotten into with previous panels.

I was pleased to hear Senator Faircloth point out that not only does this affect the rights of the landowner but it also affects the very way we fund our local governments, our schools, and so forth. In my home State of Louisiana, when your land is designated as a wetland, the value drops to about 20 percent of its predesignation value. So the program has a significant impact on local tax bases.

I'm particularly pleased that you have agreed to address this issue in the Clean Water Act, that you are asking the kind of questions that you just asked, that Senators Baucus and Chafee have put in a bill that we think is a step in the right direction. We think the President's plan is a further step in the right direction, but we think some more needs to be done and should be done as you ask the kinds of questions you are asking about what Federal policy should be with respect to wetland.

We support the Hayes bill in the House as the best approach and continue to believe that it has many things in it that are very important to this program.

Let me cut to an issue that hasn't been discussed very much. We think the crux of the problem today is the concept called sequencing, that the rigidity of the sequencing program on primarily private property in this country has created the reaction that has brought this issue to your attention and forced Congress to look at this issue.

We think the concepts of sequencing, categorization of wetlands, and restoration, if applied properly, provide the way out of this dilemma and can provide a way to both conserve the wetland resources of the Nation and also to relieve some of the pressure and the conflict between private landowners and the regulatory system.

Sequencing evolved. It was adopted first by regulation by the EPA and then by memorandum of agreement between the EPA and the Corps. Sequencing requires that to get a permit I must first prove that I cannot avoid the wetland in question, I have no other place to go with my activity. Second, if I can get past that step, then I must minimize my impacts. Finally, I must mitigate those impacts that aren't avoidable. Sequencing has turned the wetland equality program into a program that attempts to avoid economic activity on private property and that's why the reaction has been the way it has been toward Congress about this program.

We believe that classification of wetlands, albeit a difficult task and a big task, is a way to try to prioritize the attention of the Government on the most important wetlands and maybe add a little flexibility on the less important wetlands to try to relieve some of the pressure on the program.

We think that classification by functions in the State watershed plans is a good first step, if the States will do it, but we still think classification is necessary on the full Federal plan. The President said it's not achievable and feasible, but we note two things. The Government is talking about becoming more customer friendly. Nothing could be more customer friendly telling American citizens how their property is going to be treated. This is a very customer friendly idea in line with the reinventing government initiative.

Second, we note that the Congress, without having authorized it, has appropriated \$160 million-plus for the National Biological Survey, which is set to begin next month. This program is not going to map just the wetlands of the country but all the land of the country by its biological diversity. That seems to us to be an even bigger undertaking than mapping the private lands that are already regulated at the Federal level. In fact, we also understand that the first task of the National Biological Survey is to complete the wetlands inventory that has been begun by the Fish and Wildlife Service.

So if these things are true, it seems that the Government does have the money perhaps to try to help the private sector by mapping the wetlands so that there is some notice; classifying wetlands; and then adjusting the rigidity of Federal regulation based on the importance of the wetland value involved.

Again, we like the watershed management approach, we like the programmatic permitting approach, but there is no assurance that this will happen at the State level.

Restoration is a key issue. The private sector can be part of a restoration program. A lot of the wetlands in this Nation have been converted from wetland and can be converted back to wetlands. Mitigation banking is an important tool in that effort. We would suggest, however, that you not limit mitigation banking to just restoration of wetlands. Certainly creation of wetland is possible in certain circumstances. There are many instances of mining reclamation that has turned uplands into wetlands, where environmental awards were given for that achievement. We think that the Congress should take cognizance of this achievement as the President's program has.

We also believe that if Congress wants these mitigation banks to be private sector banks that are funded by the private sector, Congress might want to go a little easy on the notion that they have to be created in advance of their use. Perhaps they can be created contemporaneously with their use when there is normally an incentive to create the bank. Clearly, they need to be examined, to be monitored, to be enforced when they are not working properly, but we think they are an important tool.

Mr. Chairman, you raise a very good question about the extent of waters of the United States. We believe that for now the 1987 guidelines for identifying wetlands are probably the best wetlands identification tool that can be done at this point. We would encourage the Congress to provide that, when more information is available, if Congress thinks the definition is not correct, then Congress should legislate that definition rather than change the definition through a rulemaking. This is a fundamental jurisdictional decision by the Congress of whether the Federal Government should be regulating in this area and we think Congress should make that decision as elected officials.

We agree with the extra activities that should be regulated—drainage, excavation, channelization. If you're going to have a wetlands program, then Congress need to regulate the activities.

There are some things about the program implementation that I'd like to talk about very briefly. Senators Baucus and Chafee make strides on the 404(c) veto provision of the EPA. It's very clear to us now that the EPA and the Corps are in concert in this program, that they are working together, that the EPA's voice is being heard. Then we would invite Congress to consider doing away with that veto. The veto is a very unique mechanism in government. It is a back-end mechanism and perhaps the time has come to get rid of that mechanism. So we would invite Congress to take one more step than has been taken in the Baucus-Chafee bill.

The administrative appeal is a good provision. We prefer the President's approach which limits the administrative appeal to the landowner who has been denied a permit or who has other difficulties. The environmental groups and others can participate in a judicial appeal. There are many agencies involved to represent the public; the question is, does the landowner have an appeal. So we prefer the President's approach to the Baucus-Chafee bill approach.

Deadlines for action are good but we ask you to include a "hammer" on the deadline. If the permit hasn't been issued, then it should be deemed to have been issued. There is no hammer today in the law. Ninety days for action is what is required often today and if something doesn't happen automatically, Congress perhaps will not have made the strides Congress would like to make.

General permits are good things and we are pleased that the President's plan nor the Baucus/Chafee bill has changed general permits.

One comment about the role of government and the one comment about private property rights. We like what the bill and the President have done with regret to the role of the State and local governments. If Congress you wants it to work properly when these other programs have been set up, then you must get the Federal Government out of the program. There is no reason to have the Federal Government look over the shoulder of the State and second guess their permit judgments. If the State proves not to be acting properly, then the Federal Government can move back into the program, but while there is a State and local program, remove the Federal government or else we will end up with two programs, not one program, and Congress will have made no great stride forward.

Finally, the issue of private property rights. We all recognize these rights and we know they are important. This program directly affects these rights. It is not enough, we think, to say if you have a problem, go to court. For a person to go to court against the Government is probably a \$200,000 or \$300,000 legal fee kind of burden; it's a 5- or 10-year period of time. The Federal Government will pay if they lose—that's what the law says—but who can carry the case while it's ongoing?

We would recommend that you create some mechanism for at least some classes of people to get compensation when they have had takings occur. Secretary Babbitt has suggested in a hearing on the House side that the Land and Water Conservation Fund might be used for this purpose. We think that's an interesting idea that bears some examination. But to say Americans are protected because they have the right to go to court is often to say that only rich Americans and corporations are protected.

Thank you for your efforts in this issue, Mr. Chairman. We look forward to working with you toward a resolution of this issue.

Senator GRAHAM. Thank you very much, Mr. Szabo.

Mr. Kleckner?

STATEMENT OF DEAN R. KLECKNER, PRESIDENT, AMERICAN FARM BUREAU FEDERATION

Mr. KLECKNER. Thank you, Chairman.

I'm Dean Kleckner. I'm a hog, soybean, corn farmer from Iowa and I'm President of the American Farm Bureau. I want to thank you for holding these hearings that you've been holding and this one, and the one coming up next week in Montana.

The Farm Bureau has made the Clean Water Act, especially the wetlands part of it, our number one priority issue. Our board of directors did that. Senator Graham, Mr. Loop in your State, and Mr. Jenkins in your State, Senator Faircloth, are on our board of direc-

tors and helped to make that decision. It's a number one priority for us.

My comments today are focused on the issue of wetlands policy. I've submitted a statement and I'm going to make a few comments based on my statement that you have.

To America's farmers and ranches, wetlands policy became an all too familiar issue in recent years, more than we want to know about it we've been hearing. It was in large part triggered by the 1989 Wetlands Delineation Manual and while the expansive part of that manual in 1989 was a key concern, it quickly became apparent that there were other fundamental concerns that we had to deal with if we were going to have a fair wetland policy in this country.

To help put it into some perspective, farmers and ranchers are generally long-term landowners whose primary asset and source of capital is the land itself as opposed to the concerns of short-term landowners whose primary interest is just kind of navigating the 404 Permit Program, winding their way through that. We're long-term and we have to live with this forever.

We're especially concerned with the negative effect of wetland regulation on property values and property rights and believe strongly you need to address this as a committee. Already, in the short time I've been here, I've heard comments on that in your questions.

Regarding the two proposals at hand, we are pleased that several of the key issues of concern to agriculture have been raised, but are troubled that they don't go far enough to solve the problem. For instance, the Farm Bureau agrees with both the Baucus-Chafee bill and the President's proposal that prior converted cropland should be excluded, but both proposals limit the exclusion to the production of annual crops, thereby we think unintentionally excluding perennial crops like hay and fruit trees, for example. They are not included. I think unintentionally, I hope unintentionally and is one that you could rectify easily.

We recommend the exclusion for prior converted cropland similarly apply to all land regardless of the type of crop produced. On a related matter, we recommend that farmed wetlands that are so dry that you crop them virtually every year also be given prior converted status.

We're supportive of the concept first raised in S. 824 by Senators Bond and McConnell and that were continued in the President's proposal that would consolidate all wetlands delineation authority for agricultural land within the USDA. That is the concept of one-stop shopping and I know that's been mentioned also earlier today. We support it.

We also agree with the need for an informal appeals process for permit denials as well as wetland delineations. We would recommend also that this be subject to judicial review as well. Combined with the proposals for certification and training of wetlands delineators, we believe that it will have the effect of forcing integrity and better decision making on down through the system.

We are in favor of strengthening the normal farming and ranching exemptions in section 404(f) and we're generally pleased with the direction of both proposals but we think the committee may wish to explore additional changes there to ensure that the exemp-

tion works as intended. An example might be the recent Tolloch decision regarding the regulation of mechanized landclearing. A lot of farmers in my State of Iowa and other States that tear out a fence now and then and take in their bush hog and tear up the fence, the shrubbery that's been growing in the fence might have been there 40 years, so is that going to be allowed? It ought to be but the Tolloch decision, I wonder about it.

Classification of wetlands is another reform that we believe should be included in this legislation. We strongly believe that wetlands functions and values vary considerably and that a successful and fair wetland policy must take that into consideration. Wetland categorization is not only possible, it is an essential ingredient in a reform effort.

I agree with what Mr. Szabo said, we're going to spend apparently \$160 million or something on the National Biological Survey, so I don't really soak up many of the crocodile tears that cried about we can't afford to do wetland categorization.

Finally, we come to the issue of private property rights. Essential to the debate—Senator Faircloth, you raised it here a moment ago in your questions also—it's a primary reason that wetland policy is so contentious. Landowners around the country believe that the current regulatory program is restricting the use of their property and adversely affecting property values.

We were pleased that the President's proposal speaks to this issue, including recognition of the need for compensation but regrettably the proposal is silent on how to resolve the problem. The current option available to a landowner of bringing action against the Federal Government in claims court is simply too expensive and too time-consuming for the average citizen to justify. They just can't afford it and can't afford the 6 or 8 years it is going to take to run it through the court.

If this remains the only vehicle for seeking redress, then most Americans will find themselves precluded from protection under one of the most basic constitutional rights. New ways simply must be found to enable the average landowner to obtain compensation for the lost use and value of property.

In conclusion, many of the reforms we have suggested previously, such as regulatory categorization, would provide some relief to the property rights concern of landowners. However, fundamentally, the Corps and the EPA must be directed to take into account the property rights concerns of landowners and be directed to minimize the adverse effect of their actions on the use and value of private property.

We thank you again for what you've been doing and appreciate your efforts. We look forward to working with you and I'll be happy to answer questions at the proper time.

Senator GRAHAM. Thank you very much, Mr. Kleckner.

Dr. Inkley?

**STATEMENT OF DOUGLAS B. INKLEY, DIRECTOR, BIODIVERSITY
CONSERVATION DIVISION, NATIONAL WILDLIFE FEDERATION**

Mr. INKLEY. Thank you, Senator Graham. I appreciate this opportunity to testify on behalf of the National Wildlife Federation.

You are not aware of it at this time, I know, but you were very much responsible for the career tract that I am currently on and end up sitting here today. I want to commend you for your efforts as Governor of the State of Florida to establish the State's Non-game Program. That was my first real job, working for the State of Florida's Nongame Program following my graduation and I ended up here today, so thank you.

Senator GRAHAM. I'm glad to know that we created at least one job.

[Laughter.]

Mr. INKLEY. You've created many more jobs than that, I can assure you of that, through that program.

I know that you and I would also much rather be in Florida today fishing as Florida is so famous for. I would point out that according to the National Fish and Wildlife Service statistics, there are hundreds of thousands of anglers in the State of Florida and over 100,000 angler days of fishing are occurring just today in Florida. So there's 100,000 people in Florida fishing, showing the importance of fishing and the wetlands resource.

While I'm testifying on behalf of the National Wildlife Federation today, I would be remiss not to mention that there is a clean water network which has been established and is comprised of over 400 organizations across the country. These groups are united in their effort to strengthen the Clean Water Act and especially wetlands protection as the Clean Water Act is reauthorized.

I feel somewhat like the Lone Ranger today being on this panel, however, I would point out there are dozens of other organizations that too wish they could testify today in behalf of wetlands protection.

The reason that I'm here and the National Wildlife Federation is interested in this issue is because we are deeply concerned about the fate of our Nation's wetlands. We recognize that they have many functions. One of those functions is flood control. Unfortunately, we have witnessed during the summer months extensive flooding that occurred in the central part of the country. Those floods were certainly unprecedented. Unfortunately, the flooding that occurred in the central part of the country was exacerbated by the loss of wetlands.

The result of that is we've had loss of human life, loss of private property values in those flooded areas, we've had businesses that have had to close, we've had peoples' homes flooded. So, indeed, wetlands loss has had an impact on the American public.

Another benefit of wetlands is storm surge abatement. One example is that Hurricane Andrew which blew ashore and reeked havoc in your own State unfortunately caused over \$20 billion in damage. When that hurricane blew into Louisiana with approximately the same strength, there was about \$2 billion in damage. There are many factors that contributed to the tenfold difference in damage in those two States. One of those factors is the fact there are extensive wetlands along the coast of Louisiana that helped to provide a buffer of protection.

Fish and wildlife habitat is an extremely important benefit of wetlands protection. Forty-three percent of the Nation's threatened

and endangered species are dependent upon wetlands at some stage of their life cycle.

Clean water, by providing clean water, we have much lower costs needed for water treatment plants to provide the drinking water for all of us. Groundwater recharge, 50 percent of our Nation is dependent upon groundwater. Wetlands are extremely important for recharging the groundwater and providing clean drinking water.

Finally, last but not least, is the economy and jobs. There is a \$55 billion annual commercial landing of fisheries in this country that helps employ over 1 million workers. In the 10 States represented by this subcommittee, there are provided over 235,000 jobs for people in the recreational fishing industry alone. There are over 36,000 commercial fishermen in these 10 States alone making a living that way, and over 14,000 jobs provided in fish processing plants.

That's the reason for the National Wildlife Federation being here today and being so interested in wetlands protection, because of all their functions, because of the values that they provide to every American citizen.

Let me briefly address the legislation and also the Clinton Administration's position which has recently been released. That is a lot to talk about. Senator Boxer's bill and Congressman Don Edwards' bill, both bills we strongly support. In the interest of time and brevity, I will not go into the details of those.

We perceive those bills to be balanced, fair approaches to helping address this problem of wetlands protection. I probably shouldn't let you in on this secret, but if you'll promise not to tell anyone, I will, and that is that when H.R. 350 and Senator Boxer's bill were written there was some consideration given to what the approach should be. Should the approach be to try to set the lefthand side of the debate and then work for a compromise or should the approach be to try to come out with something that is reasonable, fair and balanced? The secret is that we decided to do the latter and come out with something that is fair and balanced. So that is where we are coming from.

Another bill that I should mention is the Hayes bill introduced in the Senate last year by Senator Breaux, H.R. 1330. The National Wildlife Federation does not support this bill in any way. We believe it will tremendously increase the cost to the Federal Government of implementing the wetlands protection program and lead to accelerated wetlands loss.

We commend Senators Baucus and Chafee for their introduction of a wetlands bill. We appreciate their efforts to try to bring everybody to the table. We look forward to working with them. We are very pleased with certain aspects of their bill, but would like to work to strengthen their bill as well.

With respect to the administration, we are pleased with several portions of the administration's position. One is the withdrawal of the Alaska exemptions. Let me address the Alaska exemptions. I think Senator Murkowski's photos were very appropriate to show today because they did show through the oil and gas development which was in those photos can development can go ahead and move forward in Alaska. The fact of the matter is that 75 percent of the permits that were applied for in the last 20 years in Alaska were

granted. The fact of the matter is only 15 permits total in the last 20 years required mitigation requirements.

The Fish and Wildlife Federation is working for strengthening the wetlands protection at this time because of the current status of wetlands. Having lost more than 50 percent of this Nation's wetlands, we continue under the Clean Water Act as it is implemented today according to the latest Fish and Wildlife statistics, to lose 290,000 acres of wetlands a year.

If this Subcommittee on Clean Water, Fisheries and Wildlife is to fulfill its mission, as indicated by the name, then we must strengthen wetlands protection.

We look forward to working with the committee. Thank you for the opportunity to be here today.

Senator GRAHAM. Thank you, Dr. Inkley.

Mr. Brown?

STATEMENT OF TED BROWN, VICE PRESIDENT AND GENERAL COUNSEL, ARVIDA COMPANY

Mr. BROWN. Let me first make it clear that my appearance is not on behalf of my company but on behalf of a foundation which is comprised of approximately nine companies, while small in number, but nonetheless representing landholdings in 44 States of the United States.

We applaud initially the efforts evidenced by Senate bill 1304 and by the President's initiative, but I think we believe there is more that can be done to make the program more workable and more rationale.

First and foremost, I think it is important to point out something that I have not yet heard today in my sitting here and that is a clarification of the concept of no net loss. I believe everyone accepts the idea that no net loss is a goal to which we ought to aspire, but I note with interest and hope it was an oversight that there is no mention of no net loss of function and value which has been the touchstone of this process, at least up until this time and one which I believe is imperative, be it part of the process going forward, if we have any hope of achieving a net gain in the future.

Second, I'd like to talk briefly about administrative and judicial review. Senate 1304 as submitted provides for administrative review of a permit denial and suggests that you must go through that course of action prior to being able to proceed forward with judicial review. I would urge as you review this particular piece of legislation to give serious consideration to allowing a permit applicant who has had a permit denial to select either of those alternatives.

It occurs to me that after one has spent usually hundreds of thousands, and in some cases, maybe millions of dollars to get to the place where a permit denial has taken place, the applicant ought to have the ability to determine which of those two courses is more likely to generate a result he can live with. It may well be that the administrative review process affords an opportunity for compromise that would be more expeditious. So I think incorporating that into the bill is an important step.

On the other hand, the applicant may well perceive that the level of conflict that exists on his application has no prospect for compromise and in that instance, he ought not be forced as a condition to proceed to go to court to have to spend another 6 months, 9 months or a year in administrative review at that stage of the proceeding. So we would urge that on that particular aspect of the bill, either option ought to be available to the landowner or permit applicant.

The President has suggested an administrative review for jurisdictional delineation determinations and we applaud that initiative and ask that it be incorporated in any legislation which you might adopt. It is long overdue and it certainly will give rise to greater accountability within the system itself if those who are called upon to make delineations understand that they are subject to administrative review by independent personnel within the agencies.

Another subject which is frequently talked about and about which there seems to be some hesitancy to deal with is the notion of one agency controlling this process. In the President's remarks, he notes that he wishes to eliminate duplication, eliminate the contentiousness of the process and I would report to you that there is nothing more contentious and more duplicative than having to engage in the shuttle diplomacy that one engages in as you move back and forth between the offices of the EPA and the Corps of Engineers in an effort to achieve a permit.

The President interestingly enough, not in his direct remarks which he released, but in the questions and answers which accompanied those remarks, notes "The Administration is prepared to take steps to emphasize a single decision maker, to streamline the various Federal wetland programs and reduce duplication, overlap and delay." That ought to be the linchpin upon which this committee should go forward and give serious thought to consolidating the administration of this program in either the EPA or the Corps of Engineers.

If that is absolutely politically unworkable, let me suggest a compromise that I think would at least inure to the benefit of permit applicants in any event. It goes something like this. If an application is filed with the Corps of Engineers, the EPA would, and I'll arbitrarily pick a period of 60 days, make a determination that the application affects waters or wetlands of national significance and it would have the right to preempt the Corps at that point and take over the permitting responsibility.

If it makes that election, then the Corps of Engineers would simply become a commenting agency and the absolute prerogative for administering the permit would then be vested in the Environmental Protection Agency. On the other hand, if the EPA is not prepared to make that certification within the 60-day time frame, then the application would remain with the Corps of Engineers and the EPA would simply become a commenting agency with no right of a veto.

The effect of this is at least the permit applicant has at a particular point in time now knows it's dealing with one resource agency, one Federal permit decision maker. We think that is a way that would materially improve the effectiveness of the program

without disengaging either of those agencies if it is politically impossible to do so.

Last, I want to talk quickly about classification because a lot has been said about it but I think some points that need to be made have not been made.

Your bill 1304 does nothing with this idea. The President says that prior categorization ranking would not provide for consideration of individual impacts associated with specific projects and it would cost too much. The President also agrees and very importantly to two fundamental predicates that go right to the heart of classification. He acknowledges that not all wetlands are equal and he acknowledges that the process rigor should coincide with the value of the wetland that is being impacted.

We believe that is classification and that classification can be done but not across the whole country—I differ with Mr. Szabo a little bit on this. My view is that criteria ought to be developed on a watershed basis as we do the watershed analysis that we have been talking about and that at the time an applicant comes in to have a jurisdictional delineation of his property, he would simultaneously get a classification. Then the rigors of the permitting process that apply to that classification after that classification is in place would be adjusted to reflect whether it's a high, low or medium value wetland.

I notice my time is up. There are a few more observations I'd like to make about that but I want to be responsible to your rule.

Thank you very much, sir.

Senator GRAHAM. Thank you very much, Mr. Brown.

Mr. Martin?

STATEMENT OF KEVIN C. MARTIN, PRESIDENT, SOIL AND ENVIRONMENTAL SERVICES, INC.

Mr. MARTIN. I appreciate the opportunity to be here today. I'm going to keep my initial statement short because I'd like to allow plenty of time for questions. I think that's normally more productive. I found it was in the White House Interagency testimony.

I'm an environmental consultant from North Carolina and about 40 percent of my work is involved in wetlands. I have a Bachelors Degree in conservation, a Masters in soil science and hydrology. In essence, by accident, I fell right into the three parameters that are required for looking at wetlands. I can assure you I didn't intend to.

In 1985, about 10 percent of my business was related to wetlands. Currently, it's gone up to 40 percent over the last few years. I am the Chairman of the Technical Committee of the National Society of Consulting Soil Scientists and I'm on the Wetlands Restoration Committee for ASTM. Also I've help test the 1991 manuals and on a daily basis, I'm out in the field delineating wetlands. So most of my comments are going to be based on experience dealing with the 404 Program.

Unlike a lot of other testimony I've heard, I'm going to try to stick to just the aspects of the program that I have firsthand experience in and not broad generalizations about things I don't know anything about.

In general, the White House policy and Senate bill 1304 make steps in the right direction to clarify the muddy wetlands issue that we currently have. In fact, I'm pleased to see that some of the specifics that many of us presented during the White House Inter-agency Task Force meetings have been incorporated into the White House policy.

I do have several concerns related to these matters, however, and associated wetland issues. An appeals procedure for both delineation and permitting is a necessity as you've heard before. Permitting alone would not be adequate; there must be an appeals procedure for delineation. This should be by persons who are not involved in the original action and possibly from an adjacent district. It would be ludicrous to ask the initial person who made the first opinion to come back and reaffirm his own opinion.

A value-rating system is a must. It is briefly mentioned in the White House policy. The hydrogeomorphic classification system that was developed in North Carolina is mentioned. Unfortunately, that system won't work for the purpose that we are after. It only identifies the types and kinds of wetlands that are present but not the way their functions and values can "be ranked" into high, medium and low.

Other systems like those developed by the NC Division of Environmental Management have been utilized and have been shown to work effectively. Such systems allow a person like myself or anyone else who looks at these systems to go to a site and determine, am I dealing with a high, low or medium value wetland. Once you know that, you can immediately ascertain and advise someone as to what their potential is for successful completion of a project. In other words, a high value would have low potential, a low value would have high potential, and a medium value would probably be a negotiated mitigation type project.

Currently, the Corps districts are too free to develop policy that can in many cases significantly change their authority. Luckily, in North Carolina our district uses this power responsibly and in my opinion, has been very responsible and reasonable in their actions. Other districts I have dealt with purposely ignore guidance from the Corps of Engineers office in Washington, D.C. and therefore, this results in property owners in one State being treated totally different than property owners in another State by the same set of laws.

For example, with the nationwide permit, it clearly states under 26, the permit could be authorized for between 1 to 10 acres. However, if in the district's opinion it is a significant impact, the whole process can be stopped, yet there is no way or no procedure for determining what is a significant impact. It's the independent opinion of an individual.

The development of regional indicators of hydric soils by the USDA is a dangerous process and it should be renamed or the project should be dropped. It was initially called regional indicators of soil saturation which was appropriate. There is no such thing as a list of indicators of hydric soils. You cannot reduce an entire field of science to a two-page punchlist which is exactly what is being attempted.

Several government officials in SCS have noted that the imposition of such a criteria could reek havoc if in the wrong hands. If you want to water down soil science, you will have to be prepared to accept huge errors in wetland delineation one way or the other, either vast areas will be claimed that shouldn't be, or vast areas that should be claimed will not be.

Continued funding of the national wetland inventory maps does not make sense. These funds could better be used elsewhere. I'm not in favor of raising taxes, as Senator Faircloth mentioned, to come up with new programs and new issues. I would rather see a redirection of funds that exist. In our experience, the NWI maps do not do as good a job as existing soil survey maps in predicting the presence of wetlands. In fact, if you read the disclaimer on every national wetland inventory map, it notes that the same procedures utilized by the Corps for delineation of wetlands are not those utilized in the preparation of NWI maps. Therefore, it's not consistent with the 404 Program.

For example, funding exists for States to set up wetlands programs but once set up, no money is available to help run the program. It makes no sense. This money could better be directed from NWI to the States to help and assist in their wetland programs.

Proposed funding to map all wetlands in the U.S. is not sane. You should consider the cost and need for this. Who will do it, how will it be done, where will qualified persons be found, and how long will it take and at what cost? I think when those questions are answered, you'll be shocked at the cost that will be there. There is no need to map wetlands on a property unless there is a proposed change of use in that property.

The EPA has already funded projects in various States for mapping that will not be accurate for Corps use. In fact, some of the mapping that is being done if we come up with a new manual, will be no longer valid.

The delineator certification is a good idea for the private sector *and* government personnel. I would like to point out that agricultural land is not exempt, contrary to popular belief. In fact, it is subject to two sets of regulations, Swampbuster and 404, unlike private development that is subject only to 404. Thank you very much.

Senator GRAHAM. Thank you, Mr. Martin.

Mr. James?

STATEMENT OF DAN JAMES, FEDERAL AFFAIRS REPRESENTATIVE, PACIFIC NORTHWEST WATERWAYS ASSOCIATION

Mr. JAMES. Thank you for giving me this opportunity to speak to you today.

PNWA, the Pacific Northwest Waterways Association, includes 149 organizations in the States of Idaho, Oregon and Washington. Our membership includes public port authorities, utilities, irrigation districts, grain growers, major manufacturers, several forest products industry concerns, transportation providers and others interested in the economy of the Pacific Northwest.

Today, I am here representing the work of our Wetlands Committee which includes wetlands biologists, water rights attorneys,

and representatives of several parts, public utilities, and agriculture concerns from throughout the Pacific Northwest.

We have endorsed the administration's wetlands policy and support much of S. 1304. We have on major concern in the bill which we would like to see addressed and that is the benefit of bringing State and local land use planning together with wetlands regulation. You heard a bit about that earlier from Ken Bierly from the State of Oregon.

Most northwest cities and counties develop land use plans to guide both development and preservation. Land is zoned for natural preservation, residential, commercial, industrial and other purposes. The problem arises after the planning process is completed when a public or private landowner seeks to develop its property. For example, public port authorities own a substantial portion of their community's industrial or marine industrial-zoned land. It's not until a client has been identified and the port seeks to develop its industrially zoned property after all other land use decisions have been made that the Federal wetlands process begins. Often it results in a portion of the port's industrial property being delineated as a wetland, which reduces the community's inventory of industrial property and reduces the ability of the local community to meet its economic needs.

As Senator Kempthorne knows, many of our communities in the Pacific Northwest include timber-dependent communities trying to diversify their economies. They are competing to attract new industry with other countries in the Pacific Rim. Their success in winning a new facility can be directly tied to predictable permit decisions to prepare property for industrial sites.

The following are a few of our recommendations to incorporate wetlands regulation into land use planning. Section 12 of S. 1304 sets criteria for wetlands and watershed management plans, "to integrate wetlands planning and management with broader resource and land use planning and management." We agree with this approach. However, we propose to take this concept one step further by allowing local jurisdictions to elect to initiate the Federal regulatory process, including sequencing and alternatives analysis for land use classes as a part of their local land use planning process.

The result of this cooperative process would be the issuance of a programmatic general permit for development, protection and mitigation activities consistent with the plan. We believe this will increase the quality of local land use plans, increase the certainty of implementing the land use plans adopted by local jurisdictions, increase the certainty of protection for valuable wetlands, and increase the certainty that local communities will be able to meet their economic needs. We have included concept language that will meet this objective in our written testimony that we have provided.

In comments on other provisions of S. 1304, PNWA endorses the establishment of deadlines for issuing permits and we support the establishment of mitigation banking as a form of advanced compensation for development. Our written testimony also includes suggestions for modifications. They include the definition of fill material; in section 6, we propose the bill be amended to use the administration's policy regarding appeals which would limit appeals to determination of regulatory jurisdiction, permit denials and admin-

istrative penalties. In section 8, we propose adding confined dredge material disposal areas constructed in uplands to the list of what shall not be considered navigable waters. In section 9, we would add an expressed preference for using mitigation banks over on-site mitigation because of their numerous advantages. In section 12, we propose to broaden the authority to issue programmatic general permits to include activities consistent with approved State or local land use plans.

Finally, there is one issue that is not included in S. 1304 which we propose adding. There needs to be more flexibility in the permitting process to adjust the regulatory requirements based upon differences in wetlands function and values. We believe this is a necessary improvement and we were pleased to see that it was included in the administration's wetlands policy.

PNWA greatly appreciates this opportunity to present our views on wetlands reform to the subcommittee. Thank you for giving us this opportunity to advise you on the wetlands portion of the Clean Water Act reauthorization and we do look forward to working with the subcommittee throughout that process.

Senator GRAHAM. Thank you very much, Mr. James. You may be our last witness for the day and I'm certain you're the witness that came the farthest to be here, so we appreciate that.

One issue that I've been concerned with in this program and have raised several times today has been the relationship between the Federal Government and the States. Is it your general proposition that the States should be encouraged, discouraged from assuming a greater role in the administration of this program. If it should be the States should be encouraged, do you believe that the provisions that are in the legislation as introduced or the administration's proposal would be sufficient to attract the States' interest?

Mr. SZABO. We think that state assumption is a good idea. We think the proposals probably need to address maybe two or three other things that aren't addressed. First, we think the greatest incentive for states is to let the states have some flexibility in program implementation. We don't think they are going to be very interested in assuring the program if they are forced to implement a mini-Federal 404 Program, so you're going to have to give them some flexibility. Second, we think the Federal Government is going to have to let go of the program when states have assumed it, whether through a watershed management plan or a partial State assumption or a full State assumption. We understand that Michigan, for instance, is not happy that the Government looks over its shoulder on all section 404 permit judgments.

Finally, somehow or another, Congress is going to have to figure out how to help the States pay for these programs. We don't think the regulated community wants to spend more money than it is already spending today on these programs. Somehow or another, how state programs get paid for has to be addressed.

Senator GRAHAM. As to the general proposition of encouraging States to assume more of the administrative responsibility, you would think that's a good idea?

Mr. SZABO. Yes, sir. We approve of that.

Senator GRAHAM. Other comments on that?

Mr. INKLEY. I'd like to address that from the perspective of the National Wildlife Federation.

We do have some concerns about making the program easier for State and local governments to assume what is now a Federal responsibility. I would point out, however, that as the Clean Water Act is currently written, there are already mechanisms for the State to assume the program. We do not feel that it is appropriate to relax those standards. One of the great concerns that we have is that there will not be adequate enforcement and oversight of the program should it be delegated to State and local authorities.

I would add that we very much agree with Senator Faircloth's statement that in the condition where a State is granted authority to assume the program, that should not include funding.

Senator GRAHAM. You say it should not?

Mr. INKLEY. It should not include funding.

Senator GRAHAM. Has not the experience of States been that one of the reasons that only Michigan has accepted the current delegation is because of the uncompensated financial burden that is being assumed?

Mr. INKLEY. I think that the point Senator Faircloth may have been making is that it is a very expensive program to administer and by handing it over to the States, the Federal Government will lose additional control of the program and in doing so, perhaps at greater expense for implementing the program. So yes, the State of Michigan has been the only one that has implemented it to date, but we do not have a problem with that. There are other opportunities for States to assume the program.

Mr. MARTIN. I'd just like to say that I'm pretty pleased with North Carolina. The State already, as many States do, handles the 401 Program. Without a 401, your Corps permits are not valid. In essence, they are already dealing with it. I would agree I would not like to see any additional funding appropriated, but as I pointed out just a minute ago, I came up with \$15 million that is not being used correctly that could easily be reappropriated to such issues.

Mr. BROWN. I just might add I think as a general proposition we would want to encourage you to find more creative ways to pass this program downstream. In a perfect world, when I say that I mean that I don't have any hope that the Federal Government will totally disengage from this mechanism, but you could devise a system which recognized that where there are wetland resources that clearly meet the test of being a national resource from a watershed point of view, the Federal Government would stay and play with those and then give consideration to taking the States totally out of play. Then there is a basket of resources after that the Federal Government has clearly not put in play that would then be properly put into the States' basket of manageable resources.

Then if the State wishes to go beyond that and move that down to a county to regulate on some basis, they can do it but at least under that type of a system, a landowner or an applicant for a permit can discern is this a federally regulated resource and go there and not have to concern himself with State or local regulation, or is it a State-regulated resource in which case he doesn't have to concern himself with county or Federal.

As it stands now, if I apply for a permit in the State of Florida and other States in which our companies do business, I not only deal with the Corps of Engineers, EPA, and U.S. Fish and Wildlife Service at the Federal level, but I deal with the State of Florida, the county, and a water management district all regulating the same resource, all with slightly different definitions of what constitutes a wetland and what does not, and all with differing mitigation requirements, and I'm supposed to somehow, through some measure of shuttle diplomacy, finally end up with a permit that all of those people buy off on.

I would like to see that we come to a place where there is a set of Federal resources that are important as national resources and the rest is left to the States and the Federal Government gets out of it and if the States, want to in their own programmatic agenda delegate that down to counties and other water management districts, let them do it.

Senator GRAHAM. My time is almost up. Senator Faircloth?

Senator FAIRCLOTH. I'll start with Dr. Inkley. I am opposed to the Federal Government giving money to the States unless they take it out of existing Federal programs. I would very much be in favor of passing the authority to issue permits and regulate the system down to the States and even the counties, but let's reduce the Federal bureaucracy as a means of doing it. That was what I was saying a while ago, I don't think you're going to see any Federal agency want to give up anything.

What I would like to see is the counties and certainly the State given the authority to issue or deny permits and the Federal EPA with no oversight unless they go to the Federal courts to question the decision.

What you're saying is you like Ms. Boxer's bill. Ms. Boxer's bill denies the right of appeal of the government's determination, is that right?

Mr. INKLEY. No, that's not correct. The Boxer bill does not contain a provision regarding the appeals process such as the Baucus-Chafee bill does and we do support that segment of their bill which does provide for an appeals process. It is simply unaddressed in the Boxer bill.

Senator FAIRCLOTH. In the Boxer bill, you have to go to court to appeal it, isn't that right?

Mr. INKLEY. That is correct and we do support the establishment of an appeals process as indicated in the Baucus-Chafee bill.

Senator FAIRCLOTH. You're saying that is the part of the Boxer bill you don't like, you should have an appeals process?

Mr. INKLEY. There is nothing about the Boxer bill that I do not like. It is simply an omission in the Boxer bill that is a provision of the Baucus-Chafee bill which we support.

Senator FAIRCLOTH. Don't tell me we've made an omission.

Mr. Martin, as a practitioner in wetlands, have you seen land delineated as wetlands thereby subject to rules and regulations when it was not?

Mr. MARTIN. I've seen it on many occasions.

Senator FAIRCLOTH. Why was the mistake made? What happens in such a case?

Mr. MARTIN. There are several reasons. People are human and that is who is putting the line on the ground out there and humans make mistakes. Fortunately in North Carolina, anytime I've run across such a situation, the Corps has been ready and willing to come to review even though there is no appeal procedure currently, based only on a telephone call or request. However, in some other districts, the northeast, for example, we've made requests in some cases for a year-and-a-half and were denied at the district and the Washington level an appeal to relook at the delineation under any circumstances.

Senator FAIRCLOTH. If a farmer was told by the Corps that his land is wet and you find it is not, what recourse does he have?

Mr. MARTIN. It would be the same. In North Carolina, we'd have a very good recourse. The Corps would be glad to meet me, discuss the issues. In other States, some of the farmers would just be out of luck unless they went to court which like you pointed out, they wouldn't be able to afford to do.

Senator FAIRCLOTH. You've worked in a number of States as a wetlands consultant. Do Federal agencies vary in the application of the law from State to State?

Mr. MARTIN. Yes, they do. As I pointed out in the White House testimony, lots of time it's through policy decisions. For example, I'll give you one that North Carolina did that I would agree with. They were told by Washington, D.C. not to implement the regional indicators of soil saturation, yet North Carolina and South Carolina both utilize those in wetland delineation even though they were specifically told not to until it was finalized.

I've seen other cases where I didn't agree with what was happening but there was nothing we could do about it because the policy at the district level was, "we decided not to do it because we don't want to".

Senator FAIRCLOTH. I understand that agriculture is exempt, is that right? If it is, why do I get so many calls from people in agriculture and in farming that are having problems? What brings that about?

Mr. MARTIN. I can't answer all of that. I was riding around in blueberry fields and cow pastures last week with the Corps of Engineers and if agriculture is exempt from the wetlands regs, I think myself and the Corps personnel I was riding with would like to know why we were out there doing it. If it's exempt, I don't think we should have been doing that. The Corps personnel was just as frustrated by the case as I was.

Senator FAIRCLOTH. We see that agriculture is exempt but we continue to have problems with it, time and time again.

I have read the Chafee-Baucus bill that \$4 to \$5 million would be appropriated to assist small landowners to comply with 404 programs. What effect do you think this would have and where would you see the funds being utilized?

Mr. MARTIN. I am not for sure how it would be apportioned. That would be a question I would want to know, how you get it and \$4 to \$5 million wouldn't go anywhere in handling the process that you would have to go through in wetland permitting, mitigation, et cetera, so I think it would be a big nightmare trying to decide who gets what and how it would be utilized.

Senator FAIRCLOTH. Mr. Kleckner, you were talking about farming and I thought I knew a little bit about it but the administration does not consider haying, I assume mowing, cutting, planting, and grazing a normal ranching activity. Being familiar with farming, would you tell me what is a normal ranching activity if cutting hay and grazing cattle is not?

Mr. KLECKNER. Senator, that's just as normal as the sun rising in the morning and setting in the evening. Somehow in the infinite wisdom of the Government, they have exempted that. I think it goes back to your question to Kevin Martin just earlier on agriculture is supposed to be exempt from wetlands regulations or at least normal farming practices, but they are not. It is frustrating as Kevin Martin says and you're hearing from your constituents. I guess raising corn, tobacco or soybeans is normal, but haying, grazing, cutting for hay and baling is not normal farming practice, I don't understand how that can be because it is a normal farming practice. If you are a cattle farmer, you make hay, you bale hay for the cattle. That ought to be a normal farming practice.

Exempting, I think what I said in my testimony, I think it's simply a mistake on the part of the Congress to say that annual farming but not perennial farming is exempted in certain areas, but trees, hay and pasture are normal.

Senator GRAHAM. Senator, your time has expired.

Senator FAIRCLOTH. I have one quick comment. I can answer the question exactly: The people writing the rules have never played the game.

Senator GRAHAM. Senator Kempthorne.

Senator KEMPTHORNE. Mr. Kleckner, in the State of Idaho, among the farmers and ranchers this whole issue of the definition of wetlands has been a real dilemma, not only what is a wetland but what is not a wetland. Is that your experience in the rest of the country, is it the same dilemma and how do the average farmers become aware that their property contains wetlands that are subject to regulations?

Mr. KLECKNER. I think when they want to do something that's out of the ordinary, someone tells them or they think I'd better find out if I can do this or not. We've gotten to the point in this country now where a lot of normal things are forbidden and can I clean a ditch, for example, can I tile, there's a few trees in this area that have grown up and to make my rows straight, I think I'll take those trees out and that will help my farming practice. If you're in North Dakota, it could be a little bit of what is now called a prairie pothole, as little as a few feet, they can't farm through that. There is now a prairie pothole program in the Dakota, maybe in Minnesota, maybe even in northwest Iowa where farmers say I would like to keep this as a pothole, for example, but I think I should be paid for it for the environment because it's going to be land that I won't farm or I can't farm and I'm concerned about ducks also and we're advocating and people that want to pay a farmer, that's my pothole. A Mississippi lawyer I'm familiar with got a prairie pothole on a farm in North Dakota but two people are willing to do it and he's actually paying.

I would suggest that these environmental groups running around the country sending me letters on occasion asking me for money,

and I cry when I read the letters because they are ducks and cat-tails, and their budget in 1991 was over half a billion dollars. Instead of spending the money going into court and fouling up the system, and sending out more letters for me to send in money, why don't they actually buy some of these farms and pay taxes on it to support the local school district. That would make sense to me for that half a billion that they are raising, just the 12 biggest ones. Beyond that, I'm not sure.

Senator KEMPTHORNE. In relative terms, how high a priority is resolution of this wetlands issue to the American Farm Bureau?

Mr. KLECKNER. Number one priority. Of the four or five priority issues we have, this is the number one priority issue in 1993. There is nothing anymore frustrating for farmers and ranchers around the country than trying to sort through the maize of wetland regulations that to them don't make any sense and they can't get straight answers from twice in a row.

Senator KEMPTHORNE. As I understand it, you support the concept of the Soil Conservation Service as the lead agency for wetlands determination in agricultural lands. If the Soil Conservation Service is so designated as the lead agency in dealing with wetlands, what kind of oversight or consultation if any would you consider acceptable from the EPA, the Corps of Engineers or Fish and Wildlife?

Mr. KLECKNER. I'm very leery of that oversight responsibility. To me there needs to be oversight in some manner but we supported the administration when they announced that SCS would be the delineator for agricultural land but going on to say that they would do it in consultation with or an oversight again with Fish and Wildlife, et cetera, I said oh, brother, here we go again. So I think it is the degree that would be involved.

I think in the end, the answer is there always needs to be an appeals process. I think we need to have a single delineator for farmers who can go one place and get an answer but I'm sure there will be disagreement with the delineations both ways.

Senator KEMPTHORNE. Why does the Farm Bureau not endorse the no net loss of wetlands goal?

Mr. KLECKNER. I think one of the big reasons would be that we don't think, at least up to now, that wetlands have been defined properly and how can you define a no net loss of wetlands when there is no agreement on what wetlands are.

To interpret our opposition to no net loss of wetlands to saying you're in favor of draining the Okefenokee Swamp and the Florida Everglades and the Great Dismal Swamp, et cetera is wrong. I don't know anybody that wants to do that.

The lack of a clear definition of wetlands is what concerns us and to say then for us to agree to a no net loss when we don't know what's even being talked about with wetlands is our problem. I would certainly disagree with what I heard earlier here on this panel that there's been a 290,000 acre annual net loss of wetlands in the country. Since 1985, since Swampbuster, I'm not so sure there's been any loss of wetlands in the country if they are defined property and count everything. Certainly to come up with a figure like that, you're exempting a lot of things from being counted and you're counting things that shouldn't be counted.

I can't bring wetlands on my farm in Iowa back into production if it's there under Swampbuster, nobody else can. I don't think we've had a net loss of wetlands in this country to any degree at all since 1985.

Senator KEMPTHORNE. Mr. Kleckner, thank you very much.

Mr. Chairman, I would just reiterate how much I look forward to working with you to resolve this wetlands issue.

Senator GRAHAM. Thank you very much, Senator. I share that feeling.

I'd like to pursue that line of questions as it relates to SCS. If we have a program that is going to make it more likely that States will accept the responsibility for administering the program, how would you see dealing with the issue of agriculture and specifically the role of SCS, should the agricultural side as well as the Corps of Engineers and EPA components be all subject to assumption and/or delegation by States or should the SCS portion be treated separately? If so, how should that separate treatment be?

Mr. KLECKNER. I'm not sure I can answer your question and I think I understand it. I don't know that I have an answer. The Soil Conservation Service is really connected at all levels, local and State and Federal in USDA. I'm not sure I think that's really the way Fish and Wildlife and the Corps of Engineers are, although they have offices out there. I think of them as more completely Federal.

This isn't answering your question very well and perhaps Mr. Martin or Mr. Szabo could answer your question much better than I. SCS it seems to me is thought of in the country as local, we know the people. I think of them as really experts in the area, that's their job to work with farmers, to look at soils. They know it and are trained that way as Kevin Martin. So I respect their judgment.

To be honest, I've got a lot more questions about respecting the judgments of the other agencies. I've seen them more to be adversarial. I apologize, I'm not answering your question exactly as you asked it.

Mr. SZABO. Let me try to take a crack at question. We think if the Congress is trying to treat agriculture with surety and certainty, the one distinctive feature of their current treatment is that there is a Soil Conservation Service person in every county and every parish of the country. That's not true for the Corps and the EPA. Therefore, there is a better chance of getting a consistent message the same page than you have the other agencies.

Whatever you do with agriculture, it seems to us that you have to take into consideration that reality and what will happen to those resources they are now delineating in the counties and parishes for the agricultural community.

Senator GRAHAM. That completes my questions.

Senator Faircloth?

Senator FAIRCLOTH. Talking about this loss of wetlands, we've heard it and heard it. I don't know from what period they started counting but this country gained millions of acres of wetlands between 1870 and 1950, millions of acres. The land that was cleared in this country from the beginning of agriculture about 1950 was that land bordering rivers, land that had a lot of nutrients in it deposited there over the years. This is the only land that really had

natural fertility in the southeast that you could farm. At that time, the Federal Government and the county and State governments worked the rivers, they were drained, there was natural drainage. These lowlands were ditched, drained and farmed.

Once the rivers ceased to be used for navigation and some very small rivers were used at one time, they ceased to be maintained. Chemical fertilizer, South American guana became available, Chilean nitrogen, so there was no longer a need for the natural nitrates. Vast areas of the southeast, particularly and especially all up into Virginia, were abandoned as farmlands.

The loss of wetlands began in 1950, and was started by the Corps of Engineers and the ASCS paying for canals, drainage, tile-laying: an aggressive program followed into the early 1970's. SCS supplied technical knowledge and the ASCS supplied the money to pay for it. Vast areas of the country were now drained. Of course the Corps was involved in channelization of rivers and the destruction of a lot of wetlands.

I appeared before Herman Talmadge and the Agricultural Committee in the late 1950's to say that the Federal Government was making a mistake draining farmland. We were supporting prices and bringing too much land into production. I was almost laughed out of the hearing room because we were getting ready to have worldwide starvation. As a farmer, we've heard that every year that crops are really going up, we're going to have worldwide starvation and what I said about not paying for anymore drainage was laughed out and I went home and forget it and kept on draining.

Now the same wisdom coming out of the same people has decided that to drain anything is a mortal sin. I don't know how they could have been so stupid 20 years ago and acquired this infinite wisdom in such a brief period of time but they obviously have.

If there is anything that has been overstated, it's the loss of wetlands. Certainly in Florida, the Everglades, and Senator Graham as Governor provided great leadership and a great program to begin restoration and a lot needed to be restored. It's a unique situation. The Corps of Engineers channelized the Kissimmee River and changed its name to Channel 38 and now they are restoring that.

I have one question and I'm going to quit for the day. Mr. Martin, you heard the question this morning I asked Mr. Larson about the growing seasons. Give me an answer to what you think of what he said if you understood what he said?

Mr. MARTIN. I think it was a good example of a lot of what I've seen. Unfortunately, persons in academia as well as in some of the agencies are office-bound and don't get hands-on experience dealing with the day-to-day regulations. He was expounding about certain plants have this growing season and that growing season when I assume your question was related to what is the growing season that the Corps of Engineers utilizes in implementation of the 404 Program, which is clearly stated, unclearly in the criteria. There is more than one way to determine it according to the current rules. There is no way to determine which way is the right way, according to the rules. By the right way, I mean which one will be determined by the Corps to be right. It seems to be a preponderance of this kind of occurrence that is happening with the growing season.

In reality, the growing season in North Carolina is based on a frost-free period, anyone that goes outside that has trees knows the leaves fall off of the trees in the fall and they grow back in the spring, so the growing season ends when the leaves fall off the trees, and most wetland plants also die then or go dormant.

The problem that I think you were getting at was from a realistic frost-free period in North Carolina, say in the Piedmont, roughly April through October is the growing season, but by the definition currently utilized by the Corps manual, it extends it into March through November in North Carolina which would encompass times of the year when plants are not actively growing.

Senator FAIRCLOTH. Mr. Larson extended it year-round. He said certain water-bearing plants or plants that grow in wetlands grow year-round. Mr. Larson was totally confused.

Mr. MARTIN. I agree. If the Congress did something like that, which is currently not the criteria, if they did, you would find instead of 80 percent, east of I95, probably 90 percent of that part of the State of North Carolina would meet the criteria in the winter when the plants are not transpiring and the water table as high.

Mr. INKLEY. If I could comment on that briefly. I would point out that there are three criteria which are frequently used to determine whether or not a particular area is a wetland. Those criteria include the presence of hydric soils, the presence of hydrophilic vegetation, and hydrology.

The fact of the matter is that area could be flooded for extensive periods of time and may not be the growing season at all. Would that then lead to that area not being called a wetland and would you believe that area should not be called a wetland? The fact of the matter is the area could be flooded for 3 or 4 months during the winter period when there is no growing season. Does that mean it is not valuable as a wetland? It could have extremely important functions and values as flood control, important over wintering value for waterfowl such as the bottomland hardwoods in the southern part of the country.

Senator FAIRCLOTH. Maybe you should give me your description of a growing season in eastern North Carolina, quickly?

Mr. INKLEY. Now I regret jumping into it. Actually, the definition of the growing season with respect to the way wetlands are delineated is applied to the determination of whether an area is a wetland has to do with crops, it does not have to do with hydrophilic vegetation.

Senator FAIRCLOTH. That's exactly what I was talking to Mr. Martin about and that is exactly what Mr. Larson was dancing around this morning. He went all over the woods.

Mr. INKLEY. It also makes the point that the area could be flooded for extensive periods during the nongrowing season and it really is, technically in my perspective, a wetland.

Senator GRAHAM. Senator Kempthorne?

Senator KEMPTHORNE. Mr. James, several of the witnesses today, like you, I believe, have recommended that wetlands delineation and planning and mitigation be considered at earlier stages in development. S. 1304 seeks to accomplish this by connecting wetlands permitting with watershed planning. You recommend that local

land use planning provide the vehicle for earlier consideration of wetlands issues.

Which do you believe is the superior approach and why or are they complementary?

Mr. JAMES. I believe that they are complementary. We believe that State and local jurisdiction should be given the opportunity invite the Federal regulators in as they are developing their land use plans. We would not like to see that be imposed on State and local jurisdictions. We think that each State and local situation is different and that those jurisdictions should be allowed to invite the Federal regulators into their planning process to provide guidance and oversight and facilitate the issuance of a Programmatic General Permit upon federal acceptance of the State or local plan.

Senator KEMPTHORNE. Mr. Martin, the Farm Bureau cites a recent Duke University study that concludes the National Wetlands Inventory maps and even the soil survey maps have no more than a 35 percent accuracy rate. Are you familiar with this study?

Mr. MARTIN. Yes, I am familiar with it. It was out of Duke University. I don't know the exact numbers you're quoting but there was a significant amount of error that would be not adequate for our purposes for wetland delineation under a Corps program unless as a property owner you are willing to have that kind of error. That's the reason I mentioned the cost of delineating the Nation. If you look at the cost of a soil survey per county and there is that much error, what's it going to cost to get it right? We can't afford it, there is no way.

Senator KEMPTHORNE. So you don't dispute the Duke University study that it is a very low number?

Mr. MARTIN. I have seen errors on NWI maps of 100 percent in both directions, errors that were obvious wetlands that were not caught and errors that were obvious nonwetlands that were called wet. The soil survey, however, in my opinion is much more accurate in undisturbed areas. Obviously, in a crop farm field that is ditched and drained, it doesn't matter what the soil type is. The soil survey could serve the purpose of the National Wetlands Inventory equally or increase the accuracy so why not take that money and put it to something more useful.

Senator KEMPTHORNE. Let me ask you this, what tools if any can science provide in classifying and ranking wetlands according to high and low values?

Mr. MARTIN. I'd be glad to send you a copy of the third draft of what North Carolina uses, the Division of Environmental Management which looks at all the functions and values of a certain site, various ones and rank it accordingly. For example, in what was proposed by the White House, it would call an area of bottomland hardwood. If you had an acre of bottomland hardwood wedged in between two K-Marts, it's value would not be the equivalent of a bottomland hardwood flood plain that was a continuous corridor of hundreds or thousands of acres, whereas under that methodology they would both rank equally.

Senator KEMPTHORNE. I think I read in history that much of Washington, D.C. had to be drained in order to build this facility. Isn't that ironic.

Mr. Szabo, I'd like to ask you to discuss your perspective of how many acres of wetlands are lost each year?

Mr. SZABO. I have some of the same concerns that Mr. Kleckner mentioned about the numbers. Three hundred thousand acres of less a year, I think, translates to about 10 square miles a State that is being lost (if you divide 640 acres per square mile into 300,000 acres). We're losing in coastal Louisiana 25 square miles annually of our coastal wetlands. This morning, the NOAA witness said we were losing nationally about 32 square miles of coastal wetlands annually. So I'm confused about where all those other acres are being lost because we haven't had an expanding economy with a lot of construction and my perception of agriculture, is that the tiling of agricultural land has been declining, so were not sure where all those additional area of wetland conversions are coming from.

Senator KEMPTHORNE. Mr. Inkley, I understand the administration proposal and S. 1304 both provide exclusions from wetlands regulations for prior converted croplands. How do you suggest we treat other kinds of land that may have been developed at some point and then fallen into disuse, for example, a waterfront area along a river or lake. We have a specific example I'm aware of where a new owner has purchased it and for approximately 100 years it had been a dump site—railroad ties, old cars, mill machinery. They removed all the junk, it left crevices and they filled those. They've now been cited for filling a wetland area. How do we deal with this?

Mr. INKLEY. The issue you bring up is the issue of prior converted wetlands. The prior converted wetlands issue is one we have had a lot of concern about. Basically, it says if you have a wetland that was converted to agricultural land prior to 1985, then that would be exempted from regulation under section 404 of the Clean Water Act. That affects 53 million acres of wetlands. Many of these areas continue to have the potential to be very important, especially if they were restored.

I can recall having worked with Mr. Martin before in testifying before the White House Interagency Task Force and he identified that these 53 million acres of wetlands were prime areas that could be used for restoration of wetlands. Indeed, we do need to look at these for restoration but they continue to have many important functions and values as wetlands even today. So we're very concerned and oppose the blanketing exemption of prior converted wetlands.

With respect to your question about lands that have been abandoned, we believe lands that have been abandoned from agricultural production should, if they have reverted to their natural characteristics as wetlands, they should be protected as wetlands, they should fall under the purview of section 404 of the Clean Water Act.

Please understand that we also recognize—I know there has been dispute today on this panel about it—but the normal, ongoing ranching, farming silvicultural practices are allowed to continue under the Clean Water Act as it exists today. The fact of the matter is if you have a drainage ditch that needs maintenance and clearing, you can go ahead and do that. If you want to expand the

capacity of that drainage ditch to drain additional wetland, yes that would be regulated by the Clean Water Act and it should.

Senator KEMPTHORNE. Is there room in all this regulation for common sense?

Mr. INKLEY. Absolutely. One of the problems we are facing here is that we have already lost half of the Nation's wetlands, 100 million acres. It makes a lot of common sense to a town that last week voted to move itself to higher land because of the flooding that we should provide additional protection to wetlands.

Mr. MARTIN. The statement that Dr. Inkley made in general is in some cases about PC land, true. One exception that I can think of immediately, and these are the problems, are the exceptions. The blueberry farm I was on last week with the Corps, blueberries themselves are wetland plants, the weeds that grow in between them are wetland plants. Blueberry plants have a definitive life. At a point, they die. When they die, they must be replanted. Obviously, the farmer can't do it instantaneously, it takes a while a big significant outlay of funds but by literal interpretation of the law, if he went out, yanked the blueberry plants out today and went back to plant them tomorrow, he would have to get a permit because it's now a wetland. It meets the vegetation, the soils and the hydrology. So these kind of problems I think are the horror stories that you've heard from the Farm Bureau. They do exist and they are out there. That is a big challenge for you to figure out how to handle those because the site I was at has been in blueberries since 1945. All they want to do is put them back.

Senator KEMPTHORNE. I know my time has expired but I've asked all a question except Mr. Brown, may I offer him the potluck where he can have any final statement he'd like in this?

Mr. BROWN. You asked the question and I'll try to answer, can you bring some common sense to this program. One of the things I'd like to suggest you give some thought to, and I know it is antithetical to the environmental agenda, one of the goals of this program it seems to me is to find a way to appropriate private capital for the restoration of this 53 million acres of farmland that may some day be developable land in some way, shape or form. It occurs to me if you're going to do that, you have to create a system in which private capital finds an incentive to invest in this endeavor.

I would go back to my fundamental statement I made earlier that classification is the linchpin that will do that. Imagine a system in which at the time I ask for a jurisdiction delineation on a 10,000 acre site that I plan as a master plan community that takes 25 years or so to develop, that I could simultaneously have a determination made that some of the wetlands that exist on this site are of high value, some are low, some are medium; assume within the low value wetlands I could immediately proceed to a mitigation component and the law required me as a condition of doing that I would bring back to the system something in excess on a function and value basis that I took out—120 percent, 150 percent, I don't know what the percentage should be but I would be putting back in the system a higher value function and value wetland than I took out. The tradeoff for that is I got to go there quickly without practicable alternatives and without sequencing so

I immediately have eliminated one of the major bones of contention for those of us who have to work the permit process.

If I want to look at a medium value wetland, the ante goes up and in that situation, my recommendation is you would have to go through the iterative process of showing your avoidance, your minimization and your compensatory mitigation but it would be looked at holistically, it would not be looked at in the rigid sequence because sometimes that tradeoff is well shown and is well worth the price of admission. The ratio might go up because I am now approaching a higher value resource.

For the high value wetland, maybe here the rigid sequencing, the rigid practicable alternatives would be in play and the ratio would be even higher.

What does that say to the private sector, you immediately have imposed market-driven forces that will work for the avoidance right off the box because no one in my business is going to go out and look for the opportunity to fill high value wetlands under that type of system. We will avoid automatically. We know that if we attack medium value wetlands, what the price of admission is going to be and what difficulties are encountered but our capital will definitely be attracted to low value wetlands and we will be saying we're prepared to sacrifice some of those in exchange for getting more back into the system through restoration and rehabilitation by using the private capital we would bring to play to do that.

That essentially ultimately happens at the end of the permit process but it takes 2 and 3 years to get there. If you had the courage to look at something really creative and take the blinders off the system we have in play now, and trust the market system to channel capital where it needs to go, there really is an opportunity to do that.

My real objection to premature classification is my experience has been is that develops a series of rigid parameters that are oftentimes wrong but it locks them in cement. These resources are fluid. Sometimes they are a wetland, sometimes they are good, sometimes they are bad, so I agree with the President when he says the prior categorization would not give consideration to individual impacts associated with the specific projects. The reverse is also true, I don't want a system that goes out and does what aided studies do now and preclude me from bringing in a project-specific solution.

So I say to you when you do your watershed studies, develop the criteria for classification so that I can hire my consultant to go out and look at that resource and get a preliminary determination, do I want to buy the land and what problems are associated with it, and when I bring out the Corps to look at it, they look at that land and we get not only my delineation but I get my classification. Now, I'm in a position to determine exactly what economic consequences are going to inure to my benefit and how much capital can be brought to bear on the system.

Senator KEMPTHORNE. Thank all of you for your excellent important input.

Mr. Chairman, I commend you for conducting such a worthwhile session today.

Senator FAIRCLOTH. I would like to do the same thing and I want to ask one quick question of Mr. Brown to answer yes or no. If Arthur Davis had to sit through this hearing today, would he have ever bought Boca Raton?

Mr. BROWN. No, sir.

Mr. SZABO. Mr. Chairman, may I raise one more issue. The Oil Pollution Act of 1990 uses that broad "waters of the United States" definition that you referred to earlier. The Minerals Management Service of the Department of the Interior is right now trying to do its \$150 million financial responsibility regulations under the Oil Pollution Act and they are realizing that the Act could cover tanks on farms that might be located on wetlands. That's not really what Congress was looking at. So they don't see any flexibility. They are concerned about the burden of the proof of financial responsibility requirement. The Committee might want to look at this issue as it reauthorizes the Clean Water Act this year.

Senator GRAHAM. Thank you very much. I appreciate your bringing that to our attention.

I want to thank each of you for the excellent presentation you've made and the contribution to our understanding the reality of this program as it affects the folks that each of you represent. We appreciate your assistance.

The hearing is adjourned.

[Whereupon, at 6:00 p.m., the subcommittee was adjourned, to reconvene at the call of the Chair.]

[Statements submitted for the record, and the bill S. 1304, follows:]

TESTIMONY OF JIM LYONS, ASSISTANT SECRETARY, NATURAL RESOURCES AND ENVIRONMENT, U.S. DEPARTMENT OF AGRICULTURE

Good morning Mr. Chairman and distinguished members of the Subcommittee. We are pleased to appear before you today to outline the Clinton Administration's wetlands policy. This statement is being presented on behalf of the Environmental Protection Agency, the Army Corps of Engineers, the Department of Agriculture, the Department of the Interior and the National Oceanic and Atmospheric Administration. This joint statement demonstrates the tremendous cooperation and coordination among the Federal agencies that participated in the Interagency Working Group on Federal Wetlands Policy that produced the Administration's wetlands policy.

Three weeks ago the Administration released a comprehensive package of improvements to Federal wetlands policy. This package reflects a broad-based consensus within the Executive Branch. It is a departure from the gridlock of the past and contains a balanced, common sense, workable set of initiatives that will make Federal wetlands policy fairer, better coordinated with State and local efforts, and more effective in protecting wetlands. We have attached the Administration's full policy statement to this testimony.

We would like to begin by briefly describing why wetlands protection is important, and then provide some background on the process used to arrive at this consensus package. We will then highlight some of the main provisions of the Administration's wetlands policy, noting in particular where Congressional action is recommended and whether these provisions are similar to S. 1304, the Baucus-Chafee wetlands bill.

Why Wetlands Are Important

Wetlands are among our Nation's most critical and productive natural resources. Wetlands are the vital link between land and water. They provide a multitude of services to society, are the basis of thousands of jobs, and contribute billions of dollars to the economy. Wetlands fulfill vital functions within the ecosystem, such as wildlife and aquatic life habitat and food chain support, water quality improvement and flood storage, and shoreline erosion control. In some areas, up to two-thirds of

our commercial and recreational fisheries are dependent on wetlands in their life cycles. This means that wetlands protection may contribute over \$15 billion annually to our economy for fisheries alone. A high percentage of our endangered species rely directly or indirectly on wetlands for their survival. Protecting wetlands is essential if we are to achieve the Clean Water Act's objective to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.

Given the fact that wetlands are so important, it is a tragedy that we have lost over 50 percent of the wetlands that were present in the coterminous United States at the time of European settlement. Information available from the U.S. Fish and Wildlife Service shows a loss rate of 290,000 acres a year from the mid-1970's to the mid-1980's. From the mid-1980's to the present, agricultural wetland losses have declined significantly due to the enactment of the Swampbuster provision in the 1985 Farm Bill. While these represent an improvement from the 450,000 acres we lost annually from the 1950's to 1970's, it is still far more than the Nation can afford.

The Consensus-Building Process

The Interagency Working Group was formed in response to a request to President Clinton from seven Senators. The purpose of the group was to provide a forum to allow the appropriate Federal agencies to work together, with input from members of the Congress and the public, to develop a consensus on wetlands policy issues. The group was convened by the White House Office on Environmental Policy in June and included nine agencies: the Environmental Protection Agency (EPA), the Army Corps of Engineer (Corps), the Office of Management and Budget (OMB), and the Departments of Agriculture (USDA), Commerce, Energy, Interior, Justice, and Transportation. In addition to interagency discussion, the Working Group solicited the views of a broad range of stakeholders representing all perspectives in the wetlands debate, including members of Congress, representatives of State and local government, environmental interests, the development community, agricultural interests, and scientists. With this information in mind, the group met intensively over many hours to develop a package of more than forty specific initiatives. The result is a significantly revised Federal wetlands policy that provides fairness, flexibility, and predictability to landowners, farmers and others, while also ensuring more effective protection of our Nation's wetlands.

President Clinton's Plan

The Clinton Plan includes both regulatory improvements and innovative, nonregulatory approaches to protect and restore wetlands. It includes administrative actions, some of which took effect immediately and others that will begin during the coming months. It also includes legislative recommendations for Congress to consider during reauthorization of the Clean Water Act. Several of the themes of this package are consistent with S. 1304 and S. 1114.

At this time, we would like to highlight some specific elements of the policy. A guiding principle in formulating the policy was to exercise strong Federal leadership while empowering State and local action. The Administration believes that the Federal government should lead by example as well as by directive. To this end, the existing Executive Order on wetlands will be revised to establish an interim goal of no overall net loss of wetlands and a long term goal of increasing the quantity and quality of wetlands. We are pleased to note that S. 1304 establishes the same short and long term goals as the Administration. The revised Executive Order will also direct Federal agencies to take a watershed or ecosystem approach to wetlands protection and restoration in working toward these goals.

The Administration policy also identifies voluntary, non-regulatory wetlands restoration as an essential vehicle to achieve these goals. The Wetlands Reserve Program (WRP) is a crucial part of the Administration's wetlands restoration plans. The 1990 Farm Bill requires a minimum of one million acres to be enrolled in the WRP by the end of fiscal year 1995. The Reconciliation Act of 1993 amended the WRP acreage provisions to require not less than 330,000 acres be enrolled by the end of 1995, reduced the minimum acreage target to 975,000 acres, and extended the enrollment period from 1995 to 2000. In 1992, a 50,000-acre pilot of the WRP was very well received, with proposals from 2,300 farmers to restore 250,000 acres. The fiscal year 1994 Agriculture appropriations provides for 75,000 new acres to be enrolled, which would more than double the number of States eligible for participation in the program. Under the policy, the Administration will use this program in the Midwest in conjunction with emergency assistance programs to restore wetlands and assist farmers affected by the recent flooding. The Administration will pursue full funding of the President's budget request for the Wetlands Reserve Program in FY 1995 and will seek to have this program expanded in the FY 1995 Farm Bill.

In addition, the Administration will examine opportunities to expand existing Federal programs that seek to restore wetlands through cooperative, voluntary agreements with private and other non-Federal landowners. The Administration is pleased to note that S. 1304 also promotes wetlands restoration.

To increase State and local roles in the wetlands protection and to reduce duplication between wetland protection programs on different levels of government, the Administration encourages Congress to adopt several measures. The first is to authorize the development of State/Tribal watershed protection programs which should provide for local and regional involvement and Federal approval of State programs, including minimum requirements for wetlands protection and restoration planning. In addition, the Administration recommends that Congress provide EPA with the authority to use its Wetlands Grant program to fund both the development and implementation of State/Tribal Wetlands Conservation Plans. Congress should also authorize partial assumption of the section 404 program by States and Tribes as an interim step toward full assumption. Finally, the Administration recommends that Congress amend Section 404(e) of the Clean Water Act to provide explicitly for the issuance of programmatic general permits with appropriate environmental safeguards for approved State, Tribal, regional, and local regulatory programs. Most of these measures, with the exception of those related to assumption of section 404 programs, are in S. 1304.

The Administration policy will streamline and clarify wetlands programs affecting the agricultural community. At the heart of this effort is a commitment on the part of all Federal agencies to minimize duplication and reduce inconsistencies between the Swampbuster and section 404 programs. To that end, the Soil Conservation Service (SCS) will be the lead Federal agency for wetlands determinations on agricultural lands for both programs, in consultation with the Fish and Wildlife Service and under the programmatic oversight of EPA and the Corps. The SCS will use agreed-upon methods that are consistent with those used by EPA and the Corps, and will participate fully in an interagency training program to ensure that field personnel are properly trained.

In addition, the Administration has issued a final rule that affirms the exclusion of an estimated 53 million acres of prior converted croplands from Clean Water Act jurisdiction. These are areas that, prior to December 1985, have been cropped and hydrologically manipulated to the extent that they no longer perform the functions they did in their natural condition. Consistent with S. 1304, the Administration recommends corresponding Congressional action to define the term "waters of the United States" in the Clean Water Act to exclude prior converted croplands.

The Administration policy also addresses landowner concerns regarding the section 404 program. The Corps will develop, through rulemaking, an administrative appeals process under the regulatory program so that landowners, farmers, and others can seek review of jurisdictional determinations and permit denials without going to court. The Corps will also modify its regulations to impose deadlines to ensure that permitting decisions are made in a timely fashion. The policy also endorses the use of mitigation banks for compensatory mitigation under the section 404 program within environmentally sound limits.

The Clinton policy takes several steps to increase the predictability and public acceptance of efforts to identify areas as wetlands subject to jurisdiction under the Clean Water Act. Use of the 1987 wetlands delineation manual has provided a workable and broadly accepted delineation procedure over the past two years. The Administration supports continued use by all agencies of the 1987 manual pending completion and review of the National Academy of Sciences study, expected in September 1994. To increase public confidence in the section 404 program, the Administration also is recommending Congressional endorsement of continued use of the 1987 manual, which is provided for in S. 1304.

To put to rest the notion that Congress did not intend to protect wetlands under the Clean Water Act, the Administration recommends that explicit definitions of the terms "wetlands" and "waters of the United States" be included in the statute, consistent with longstanding regulatory definitions. S. 1304 does include the definition of "wetlands."

Finally, the Administration's policy revised the definitions of discharge of dredged or fill material to close regulatory loopholes that allowed wetlands to be drained, ditched, or cleared without a section 404 permit. The Plan recommends that Congress affirm these definitional changes in legislation, as does S. 1304 for the "discharge of dredged or fill material."

Conclusion

In conclusion, we believe the Administration's reform package represents a tremendous opportunity to move beyond the polarization that has characterized the wetlands policy debate in recent years. As indicated in this testimony, there are many similarities between the Administration's policy and S. 1304. We look forward to working closely with the Committee to enact bipartisan legislation that will improve wetlands protection in the United States. Thank you. We will be happy to take any questions you may have at this time.



DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
CIVIL WORKS
108 ARMY PENTAGON
WASHINGTON DC 20310-0108



REPLY TO
ATTENTION OF

28 OCT 1993

Honorable Bob Graham
Chairman
Subcommittee on Clean Water,
Fisheries and Wildlife
Committee on Environment and
Public Works
United States Senate
Washington, D. C. 20510-6175

Dear Mr. Chairman:

The purpose of this letter is to furnish information for the record for a question by Senator Kempthorne at the September 15, 1993, hearing on wetlands held by the Clean Water, Fisheries and Wildlife Subcommittee of the Senate Committee on Environment and Public Works.

Senator Kempthorne's question was:

"Does a system of strict liability make sense in a context where it is not always clear to a person that the land in question is or is not a wetland, particularly where criminal penalties, fines and jail terms are imposed in some cases where the Corps dispute has been over whether the land in question is a wetland?"

The following expanded answer is furnished for the record:

If what is meant by "strict liability" is that one can be found liable without fault, then the answer would be no. The Army Corps of Engineers and the Environmental Protection Agency (EPA) do not proceed with criminal penalties, fines and jail sentences where the facts indicate that the responsible party did not knowingly violate the law.

Because not everyone is able to recognize a wetland, the Corps and EPA have worked very hard to publicize the need for permits for work in these aquatic areas. Also, the Corps enforcement program has as a central tenet, a

policy of seeking voluntary compliance through restoration or measures determined necessary through the evaluation of an after-the-fact permit application.

When a violation occurs in a wetland subject to Federal jurisdiction, one of the first considerations is whether or not the violator had prior knowledge of regulatory requirements. This would be indicated by any past involvement of the violator in permitting actions or violations, or by the violator having received a cease and desist order from the Corps prior to taking additional actions that would require a permit. Another consideration is the willingness of the violator to correct or minimize any environmental damages that may have occurred as a result of the action in question. Only approximately 1 percent of the 6,000 or so annual enforcement actions handled by the Corps result in litigation. Of those few cases that do result in judicial action, a very small subset (less than 1 percent) result in criminal action.

Thank you for your interest in the Corps enforcement program. Should you have additional questions, do not hesitate to contact me or Mr. Michael Davis, Assistant for Regulatory Affairs at (703) 695-1376.

Sincerely,



G. Edward Dickey
Acting Assistant Secretary of the Army
(Civil Works)

Honorable Bob Graham
Chairman
Subcommittee on Clean Water,
Fisheries and Wildlife
Committee on Environment
and Public Works
House of Representatives
Washington, D. C. 20510-6175

Dear Mr. Chairman:

This is in reply to your letter of October 12, 1993, requesting information concerning Senator Lautenberg's questions related to cranberry production, following the September 15, 1993, hearing. A copy of the questions and answers as provided by the Army Corps of Engineers are enclosed.

We apologize for the delay in providing the response and thank you for your interest in this matter.

Sincerely,

G. Edward Dickey
Acting Assistant Secretary of the Army
(Civil Works)

Enclosure

DRAFT.**QUESTION 1:**

Why did EPA and the Corps determine that cranberry growing is a water dependent activity?

ANSWER 1:

EPA's Section 404(b)(1) Guidelines provide that an activity is considered water dependent if it requires access, or proximity to, or sitting within, a "special aquatic site" (e.g., wetlands) to fulfill its basic project purpose. Given that cranberries are a wetland plant and must be grown in wetlands or in areas altered to create a wetlands environment, EPA and the Corps believe it is reasonable to consider the construction of cranberry beds, including associated dikes and water control structures associated with dikes, to be a water dependent activity.

QUESTION 2:

Why did the Corps issue a nationwide permit for some cranberry growing in wetlands?

ANSWER 2:

Given the considerable interest from the cranberry growing industry in developing a nationwide permit for certain discharges of dredged or fill material associated with cranberry production activities, the Corps sought comments, in April 1991, on the feasibility of designing an appropriate nationwide permit for these discharges into waters of the United States. After receiving numerous comments, the Corps issued, in November 1991, a nationwide permit for certain cranberry production activities at existing cranberry operations. The nationwide permit is designed to ensure that only minimal impacts would occur as a result of activities authorized under the permit.

DRAFT**QUESTION 3:**

What are the positive wetland functions of cranberry wetlands and the habitat values and other environmental values of reservoirs, uncultivated wetlands, transition areas and uplands which accompany cranberry wetlands?

ANSWER 3:

Some positive values can be attributed to overall cranberry production operations, including the maintenance of open space, hydrological support and enhanced wildlife habitat. However, a determination of the environmental values associated with cranberry operations depends on the particular facts of each operation. The expansion of commercial cranberry beds, including development of associated structures such as reservoirs and irrigation ditches, generally involves eliminating the native wetland plant community and replacing it with a monoculture plant community. In addition, the area is usually ditched, filled, and diked to control the hydrology of the cranberry bed. Conversion of natural wetlands for cranberry cultivation, therefore, often reduces the diversity of habitat. In addition, there are concerns regarding the impact of cranberry operations on water quality, especially with regard to levels of phosphorus and pesticides in waters discharged from the cranberry fields.

QUESTIONS 4:

Have the water dependency determination and nationwide permit resulted in any expansion of cranberry growing in wetlands and, if so, how much?

ANSWER 4:

Although records regarding Section 404 permit applications are maintained by Corps districts we do not have specific numbers concerning cranberry applications. It is our understanding that only a limited number of cranberry growers have requested authorization to expand their existing operations since issuance of the nationwide permit.

DRAFT.**QUESTION 5.**

How can the regulatory process be changed to make decisions on the modest expansion of existing cranberry wetlands and mitigation efforts on a more timely basis?

ANSWER 5:

We believe our current efforts to promote mitigation banking and other programmatic streamlining will benefit cranberry growers. Cranberry growers may also work with individual Corps districts to develop regional permits that provide for minor actions that are larger than what has been provided for by the nationwide permit program.

**ANSWERS TO QUESTIONS FROM SENATOR LAUTENBERG
FOLLOWING THE SEPTEMBER 15, 1993 HEARING**

QUESTION 1:

Why did EPA and the Corps determine that cranberry growing is a water dependent activity?

ANSWER 1:

EPA's Section 404(b)(1) Guidelines provide that an activity is considered water dependent if it requires access, or proximity to, or siting within a "special aquatic site" (e.g., wetlands) to fulfill its basic project purpose. Because cranberries are a wetland plant and must be grown in wetlands or in areas altered to create a wetlands environment, EPA and the Corps believe it is reasonable to consider the construction of cranberry beds, including associated dikes and water control structures associated with dikes, to be a water-dependent activity.

QUESTION 2:

Why did the Corps of Engineers issue a nationwide permit for some cranberry growing in wetlands?

ANSWER 2:

Given the considerable interest from the cranberry growing industry in developing a nationwide permit for certain discharges of dredged or fill material associated with cranberry production activities, the Corps of Engineers sought comments, in April 1991, on the feasibility of designing an appropriate nationwide permit for these discharges in waters of the United States. After receiving numerous comments, the Corps issued, in November 1991, a nationwide permit for certain cranberry production activities. The nationwide permit is designed to ensure that only minimal impacts would occur as a result of activities authorized under the permit.

QUESTION 3:

What are the positive wetlands functions of cranberry wetlands and the habitat values and other environmental values of reservoirs, uncultivated wetlands, transition areas and uplands which accompany cranberry wetlands?

ANSWER 3:

Some positive values can be attributed to overall cranberry production operations, including the maintenance of open space, hydrological support and enhanced wildlife habitat. However, a determination of the environmental values associated with cranberry operations depends on the particular facts of each operation. The expansion of commercial cranberry beds, including development of associated structures such as reservoirs and irrigation ditches, generally involves eliminating the native wetland plant community and replacing it with a monoculture plant community. In addition, the area is usually ditched, filled, and diked to control the hydrology of the cranberry bed. Conversion of natural wetlands for cranberry cultivation, therefore, often reduces the diversity of habitat. In addition, there are concerns regarding the impact of cranberry operations on water quality, especially with regard to levels of phosphorous and pesticides in waters flowing from the cranberry fields.

QUESTION 4:

Have the water dependency determination and nationwide permit resulted in any expansion of cranberry growing in wetlands and, if so, how much?

ANSWER 4:

Although records regarding Section 404 permit applications are maintained by the Corps of Engineers, it is our understanding that only a limited number of cranberry growers have requested authorization to expand their operations since issuance of the nationwide permit.

QUESTION 5:

How can the regulatory process be changed to make decisions on the modest expansion of existing cranberry wetlands and mitigation efforts on a more timely basis?

ANSWER 5:

The Corps of Engineers has issued a nationwide permit for discharges associated the expansion of cranberry production operations that requires little, if any, delay or paperwork. We believe this nationwide permit provides an appropriate mechanism to facilitate limited expansions of existing cranberry operations. In addition, EPA and the Corps are working with States to address common concerns, as well as developing appropriate regional general permits.

TESTIMONY OF JOSEPH S. LARSON, PROFESSOR OF BIOLOGY, THE ENVIRONMENTAL INSTITUTE, UNIVERSITY OF MASSACHUSETTS AT AMHERST

FUNCTIONS AND VALUES OF WETLANDS OF THE EASTERN UNITED STATES

Mr. Chairman:

Thank you for the opportunity to provide scientific background on the functions and values of wetlands of the eastern United States. While wetlands make up only 5% of the land surface area of the conterminous United States, their importance to the health welfare and safety of our citizens is highly important. I am confident that your decision to involve wetland scientists early in your deliberations will strengthen the public policy recommendations of this committee.

Functions that Gave Rise to Wetland Regulation

As your hearings address the federal wetland program, it is useful to recall that wetland regulation and the permit process originated in Massachusetts some 14 years before the federal program was initiated. The initiative for wetland regulation did not come from government bureaucrats but from local towns that wanted to protect the functions of coastal marshes as nursery grounds for commercially valuable fish and shellfish that are important to their local economies. Inland towns soon petitioned the legislature to protect freshwater wetlands because they understood their values for reducing flood damage and in maintaining water supplies, both of which are critical to local economies. Today many eastern states have their own inland wetland regulatory programs and all have some form of coastal wetland regulation. Because the effect of wetland functions extend across state lines and some extend across international boundaries, the federal wetland program serves as an important complement to state and local programs.

General Character of Eastern Wetlands

The eastern United States is characterized by abundant rainfall evenly distributed over the year. As a result, eastern wetlands change less from year to year than wetlands in the semiarid and arid portions of the continent. The Atlantic and Gulf Coasts are geologically older than the Pacific coast and have well developed and large coastal wetlands, often behind barrier beaches and island chains. Large river systems and their sediments have formed major estuarine and coastal wetland systems. In the glaciated northern portion of the region freshwater wetlands range in size from less than one acre to many hundreds of acres. They are abundant and scattered over all the landscape, along rivers and the shores of large lakes. In the unglaciated portion of the Central Atlantic and Southeastern states, wetlands are primarily associated with small to large river systems and artificial reservoirs.

Major Functions and Values of Eastern Coastal Wetlands

Marine Fisheries

Tidal wetlands are essential to the commercial fishing industry of the Atlantic and Gulf coasts. Over two-thirds of the commercial fish and shellfish harvested in the entire United States are dependent on coastal wetlands as nursery areas and as a food source. The importance of this function is high on both a local and regional scale. For example, in 1980 the economic value of Chesapeake Bay seafood, sport-fishing and related activities was valued at about \$756 million. The same region annually produces about 90 percent of the striped bass harvest along the entire Atlantic coast. Louisiana's multi-million dollar commercial inshore shrimp fishery is directly proportional to the area of intertidal wetland. Losses of these wetlands are having a major effect on the fishing industry. The National Marine Fisheries Service has estimated annual fishery losses at \$208 million due to estuarine marsh losses from 1954 to 1978.

Storm Damage

When coastal storms move on-shore at low tide, coastal wetlands can provide a measure of storm buffering. But more importantly, and fully demonstrated in recent east coast hurricanes, coastal wetlands are areas of high risk for human habitation and development. Maintaining these wetlands in their natural state by prohibiting development avoids major individual and public financial losses.

Major Functions and Values of Eastern Freshwater Wetlands

Flood Control

Wetlands on the streams of the eastern and southeastern United States provide natural flood storage that reduces the height of flood crests at substantial savings to downstream landowners, cities and towns. Especially important in this function are the large wetlands positioned on the main stem of major watersheds. Loss of these wetlands by filling or draining increases flood damage below these sites. For example, in the Charles River near Boston 8,000 acres of preserved wetlands provide flood protection that prevents \$17 million in annual average flood damage. In Wisconsin, floods may be lowered by as much as 80% in watersheds that have many wetlands compared with those that have few wetlands. The bottomland hardwood forests of the Mississippi River stored floodwater equivalent to about 60 days' river discharge prior to human settlement and development. This storage capacity has been reduced to only about 12 days as a result of leveling the river and draining the floodplain. This is one of the reasons that flood damage along the lower Mississippi River is increasing.

Water Quality Maintenance

Inland wetlands act to capture sediment and to remove nutrients that can degrade downstream water quality. Recent research indicates that the many forested wetlands that line small headwater streams serve as the first line of defense in maintaining stream water quality, especially in terms of controlling the effects of nitrogen. From a water quality perspective, alterations of these wetlands merit much more careful consideration than they currently receive. Forested wetlands on the Delmarva Peninsula (Delaware, Maryland, Virginia) play an important role in reducing concentrations of nitrate in ground water and surface water. Recent studies of forested wetlands of the mid-Atlantic coastal plain suggest they have potential value for improving water quality with regard to phosphorous entering coastal streams.

The economic significance of the water quality maintenance role of wetlands can be estimated in terms of waste water treatment costs. For example, if the wetlands on streams leading into Chesapeake Bay were filled or drained it would cost over \$926 million to upgrade the sewage treatment plants in Maryland and Virginia to offset the effects of just the added nitrogen to the Bay. Swedish studies indicate that a wetland area 3/4 sq. mile in size reduces the amount of nitrogen leaking into adjacent waters by about 1,900 tons a year. If this were expressed in terms of equivalent waste water treatment costs each forested wetland acre would be providing a service worth over \$80,000 per year.

Groundwater Relations

Freshwater wetlands are frequently linked to groundwater aquifers. In the northeast and north central U.S. many wetlands are points where groundwater discharges to the surface, contributing to the flow of streams and rivers. In some cases wetlands may be points where surface water enters and recharges groundwater aquifers. In some wetlands both the discharge and recharge function may occur as groundwater levels rise and fall during different seasons of the year. In Massachusetts 750,000 people in 60 communities depend on municipal water supply wells that are drilled in or near large wetlands. Changes to wetlands that reduce the flow to groundwater or pollute the water can adversely effect affect the quantity and quality of both surface and underground water supplies.

Forestry and Fish

The bottomland hardwood forested wetlands of the Southeastern U.S. are highly productive forest sites. While the most valuable forest species were cut decades ago, many retain the potential for modern productive forest management, if they are maintained as forested wetlands. These same forested wetlands, in the spring floods, are critical fish feeding and breeding areas for bass, warmouth, hickory shad, blueback herring and edible crayfish. River swamps in Georgia produce over 1,300 pounds of fish per acre. Not only do these wetlands themselves provide seasonal fish habitat, they are the food source that supports the commercial fish and shellfish industry at locations like Apalachicola Bay, and the shrimp fishery off the wetland mangrove forests of south Florida.

General Significance of Wetland Wildlife Habitat

About 5,000 species of plants, 190 species of amphibians and a third of all bird species in the United States occur in wetlands. Wetlands provide a significant part

of the habitat of endangered or threatened plant and animal species. About 28% of the plant species and 50% of the animal species which are federally listed and endangered or threatened are wetland dependent.

International Treaties

The U.S. has an obligation to protect and manage wetlands under several international treaties. The several migratory bird treaties with Canada, Mexico, Russia and Japan require the signatory nations to maintain adequate breeding, migration and nesting habitat for migratory birds. These include not only ducks, geese and swans, but wading birds, shore birds and the hundreds of species of song birds that nest in forested wetlands. Under the Convention on Wetlands of International Importance (Ramsar), the U.S. has designated over a dozen sites as wetlands of international importance. The Ramsar Convention also obligates signatory nations to adopt policies that will promote wise use of all of its wetland resources.

In Conclusion:

In conclusion, Mr. Chairman, while wetlands have long been recognized as valuable habitat for wildlife, it is only in recent years that their importance to health, welfare and safety, and to local and regional economies, has been well documented. These functions have impacts and consequences that cross state and national boundaries. The federal government has an important role in maintaining and strengthening its wetland program under the Clean Water Act.

UNIVERSITY OF MASSACHUSETTS AT AMHERST

September 23, 1993

Senator Robert Graham, Chairman

Subcommittee on Clean Water, Fisheries, and Wildlife

United States Senate

SD-456 Dirksen Senate Office Building

Washington, D.C. 20510-6175

Dear Senator Graham:

I would like to add the following remarks to my testimony of September 15, 1993 regarding the Subcommittee's hearing on wetlands.

Federal Role in Wetland Regulation

The appropriate federal role in wetland regulation should be spelled out in the Clean Water Act. In drafting that section, I would recommend that our international multilateral obligations be recognized by reference first to the "wise use" obligation, accepted by the United States, of the Convention on Wetlands of International Importance (Ramsar). This clearly spells out the obligation of signatory nations to develop policies that promote wise use of all wetlands within their national territories. This obligation refers to essentially all wetland functions and is clearly a federal responsibility. Secondly, I would recommend reference to our obligation to maintain migratory bird habitat under the several Migratory Bird Treaties and the special wetlands covered by the World Heritage Convention.

With respect to federal responsibilities on the bilateral international level, the federal government has the lead responsibility with respect to wetlands that are part of international river systems, underground aquifers, and wetlands that support anadromous fish that use international waters. "There may be treaties with Canada and Mexico covering specific rivers, but even in the absence of these, I would suggest that the need for a federal lead is undisputed. The federal government also has a lead interstate responsibility on wetlands that involve interstate rivers, aquifers, migratory wildlife, and fish that cross state lines.

The above composes a large portion of our national territory. It is a strong argument for federal assurance of standards and consistency much as have been established for surface water quality for the entire nation. Few states have the base for supporting a comprehensive research program, and there is need for federal sponsorship in this regard as well.

Role for the U.S. Soil Conservation Service

I support providing a role for the SCS in the section 404 program, but the Administration's proposal that SCS be responsible for delineation on all "agricultural lands" is premature. First, it is not clear what the term "agricultural lands" is meant to embrace: cropland, all grazing lands, all forest lands?

Secondly, and perhaps more importantly, the SCS (unlike the EPA, Corps of Engineers, U.S. Fish and Wildlife Service, and National Marine Fisheries Service) brings to the program only a tiny scientific staff trained in wetland ecology or management. Nor does SCS have a research component. I am very much afraid that if the SCS is given the delineation responsibility we will be inviting a period of litigation in federal courts much as was experienced when the Corps of Engineers first took responsibility for the 404 program. The SCS administration has long had a role of assistance that has made friends for the agency in the farming community, much as the Corps had developed friends in the construction, flood control, and navigation community. The 404 program is a regulatory program, and the delineation aspect, in particular, wins no friends. It took the U.S. Supreme Court to force the Corps administration to accept the Congressional direction of the 404 program. I am very much afraid that the SCS administration will be just as human and is much less equipped as an organization to handle a major role at the outset.

I would recommend that SCS be first brought into the 404 program in the same kind of advisory and consultative role in which the U.S. Fish and Wildlife Service and the National Marine Fisheries Service now perform. The purpose would be to bring in SCS in a step-by-step fashion to give time to develop an appropriate role and to determine how much in the way of added staff and funding are needed in order to take on more responsibility.

Sincerely,
Professor and Director

TESTIMONY OF DAVID J. COOPER, SENIOR RESEARCH SCIENTIST, DEPARTMENT OF FISHERY AND WILDLIFE BIOLOGY, COLORADO STATE UNIVERSITY

Functions and Values of Wetlands in the Western United States

Mr. Chairman:

The western United States is often overlooked in discussions of wetlands, yet the West contains large and important wetland complexes. Western wetlands are critical habitat for waterfowl, shorebirds and other migratory birds that is of international importance, they perform water quality and flood water retention functions that are of interstate importance, and vital economic value to every state and region. Because much of the West is arid or semi-arid it is critical to consider these distinctive wetlands in formulating wetland regulation programs and policies for the United States. In most western states wetlands comprise less than 1-3% of the total land area, and in Nevada only 0.3% of the land is wetland. I appreciate the opportunity to participate in this hearing and provide you with scientific information and perspectives on the functions of wetlands in the western United States.

General Character of Western Wetlands

The western lower 48 United States is a vast region of high mountains, intermountain basins, grasslands, deserts, agricultural lands and the Pacific Ocean coast. Within this region precipitation is unevenly distributed geographically, annually, and seasonally. The west coast, Great Basin and most of the Rocky Mountains receive largely winter precipitation, the Great Plains receive largely spring and early summer rain, and rain comes in the southwest during mid to late summer. Because precipitation is seasonal many streams and basins are wet seasonally and may be dry at other times of the year. In addition, year to year variability in the total amount of precipitation received is tremendous with drought as well as wet cycles being characteristic. Where water has been abundant wetlands have occurred, yet many times nonwetland uses for this water have taken priority and the water has been diverted elsewhere, or seasonally there has been too much water making other land uses, such as farming, impossible, and wetlands were drained.

A number of different wetland types occur in the West, each a result of hydrological patterns and processes interacting with distinct landscape types. *Riparian wetlands* occur along floodplains formed by seasonal runoff patterns. Riparian wetland functions change from high to low elevation as the size of stream and power of the water increases and as vegetation changes from herbaceous species to willows, to alder or conifer forests, to cottonwood or mesquite forests. Wetlands in landscape depressions or *basins* are fundamentally different from those occurring along streams because they lack the power of moving water. Basin complexes have a number of different names reflecting their geographic location and origin. Included are prairie potholes (northern prairies), playas (southern prairies and intermountain

basins) and vernal pools (California and the desert southwest). These basins support fresh or saline marshes. In mountainous regions snowmelt feeds groundwater systems creating innumerable springs that range in size up to hundreds of acres. At the most constant springs decomposition of plant roots and leaves is slow and organic matter accumulates to form *peatland* ecosystems similar to those of the far north. In areas where the groundwater table is close to the soil surface but the ground is not wet all summer *wet meadows* dominated largely by rushes and sedges are common and may cover tens of thousands of acres. In certain areas wet meadows have been created by irrigation water diverted from streams or pumped from underground aquifers.

It is important to stress that many of the most valuable wetland types in the West are not wet at all seasons. You might ask how can wetlands that are dry for parts of the year be so valuable? The answer is that seasonal drying increases their value for many functions such as food chain support and flood water retention. It is not possible to say that wetlands in one region of the United States are more valuable than wetlands in another region. Small seasonally wet wetlands in an arid region may be just as valuable to that area as larger wetlands in a humid region which are wet all year. All wetlands provide important functions for their region. Local and regional planning efforts can determine which wetlands are most important to that region.

Functions and Values of Western Inland Wetlands

Water Quality Maintenance and Improvement

Wetlands can improve and maintain water quality in several different ways. Sediment is one of the most important pollutants in the west because so much sediment is generated from agricultural and other sparsely or seasonally vegetated lands and this sediment may carry excessive nutrients, metals, pesticides and other pollutants. Many wetlands trap and retain sediment thus, removing pollutants from the water column. Once sediment is trapped, it must be retained in the wetland for the function to be realized. This requires maintaining the basins integrity (no draining) and vegetation which stabilizes the soils along floodplains. In Wisconsin, sediment yield from watersheds is directly correlated with the area of wetlands in that watershed—the more wetlands the less sediment.

In the mountainous west heavy metal pollution of surface waters from mine adits and tailings piles is a serious problem. Wetlands, particularly peat lands, provide an oxygen poor and organic rich soil environment supporting microbes that can remove many metals from solution and sequester them. My studies indicate that wetland soils in Colorado can be as high as 10% to 30% metal by weight! Heavy metals removed include not just Zn and Cu but also moderate or high concentrations of uranium which the wetland removes from groundwater. The regional economic value of metal removal is not known but it is known that wetlands function only when their hydrologic regime and vegetation are intact.

Surface water bodies in the West, such as Lake Tahoe, California + Nevada may be extremely clear and clean due to the purity of waters. Lake Tahoe's water source is snowmelt which contains high nitrate concentrations received with precipitation. Nitrates flushed into the lake would degrade water quality, however up to 99% of the nitrate received from precipitation is removed by wetlands surrounding Lake Tahoe maintaining its water quality. Wetlands naturally are so efficient at the removal of many nitrogen compounds that municipalities from Minot, North Dakota to Arcata, California have built artificial wetlands to treat municipal waste water.

Flood Water Retention

Many basin wetlands can hold large volumes of water for short periods of time and are provide the greatest detention function when they are largely isolated. This function is diminished or lost completely when a basin is drained. The function comes not just from total water holding capacity, but also from desynchronization of flood waters so that water is held for differing lengths of time in different basins. Basin wetlands in the upper Mississippi River valley have sustained 80% to 100% wetland loss, largely by drainage, and the flood flow alteration function has been destroyed.

Researchers in Wisconsin have found that flood flows may be as much as 80% lower in watersheds containing 40% of their area as lakes and wetlands than watersheds with little or no wetland area. Nearly 50% of the flood peak reduction results from the first 5% of lakes and wetlands in the watershed.

Lawn Lake Dam, located in Rocky Mountain National Park, was built as a water storage reservoir for the town of Loveland, Colorado. In 1982 the dam failed sending a wall of water down Roaring River toward the town of Estes Park. Luckily a large

wetland basin, Horseshoe Park, occurs Just upstream from Estes Park, where the water velocity slowed from 9.1 to 2.1 miles per hour due to retention in the basin and the town was spared the brunt of the floods destructive force.

Water Storage

In spring, the melting mountain snowpack increases stream flows raising water tables in seasonally dry floodplains. This groundwater is temporarily stored and later released when stream flows are at their minimum. This groundwater discharge maintains stream base flows for fish and municipal and agricultural use downstream. In the Gunnison River basin in central Colorado more than 1/2 of an acre foot of water per acre of floodplain can be stored in soils for release in the dry months of late summer. This adds up to thousands of acre feet of water storage and yield seasonally, the value of which is very high. This function is destroyed by drainage projects, stream channelization and flow regulation.

Riparian restoration projects in the West have reduced livestock grazing pressure and repaired downcut stream channels facilitating vegetation recovery on many floodplains. This rejuvenated vegetation accumulates sediment and increases floodplain water storage which in several instances has changed streams from intermittent to perennially flowing! The importance of vegetation interacting with the stream to stabilize sediment and store water cannot be overemphasized.

Fisheries Support

The Rocky Mountains support famous cold water trout fisheries. Trout inhabit undercut banks in small streams, pools in larger rivers and feed on aquatic insects produced in the stream. These aquatic insects feed largely on leaves, twigs and other organic matter that falls from riparian vegetation into the stream. Riparian wetland vegetation feeds the stream insects that trout depend upon. In addition, the woody roots of willows, alders and other shrubs and trees stabilize the streambank that is habitat for fish. The riparian trees and shrubs are important while they are alive for their leaf input, and they are Just as important when they die. Trees fall into streams creating pools that create habitat. Thus, the quality of a trout streams fishery can many times be measured by its adjacent riparian wetlands. Trout fishermen in every Rocky Mountain state spend several hundred million dollars each year boosting the economy of the West.

Pacific salmon, particularly Coho, over winter in off channel or tidal freshwater wetlands and Juvenile fishes feed in riparian wetlands.

The Colorado River system is home to many endemic fishes, including razorback suckers and Colorado River squawfish. Historically spring floods would flush larval fishes from the stream channel into adjacent riparian wetlands where they would feed and be protected from the strong current and predators. The fish move back to the stream later that year, or the next year following the flood surge. Today, almost all tributaries of the Colorado River are controlled, floods rarely occur and wetlands have been dried up. Several of these fish species are nearly extinct because of this decoupling of streams and floodplains.

Bank Stabilization

Western riparian ecosystems are generally linear with narrow floodplains. The streambanks in these ecosystems provide essential functions for protecting the physical, chemical and biological character of adjacent waters. Woody plants, such as cottonwood, alder and willow provide essential bank stability which reduces erosion. Stable banks maintain water quality (by retaining sediment), and instream habitat by providing wood, litter and shade as well as bank structure. Riparian vegetation can change many braided stream channels which are moving large sediment loads into meandering stream channels which will retain sediment on their floodplains. Vegetation removal or degradation, stream channel downcutting, drainage ditches, or even diking which eliminates floods can reduce bank stability and lead to surface water degradation.

Migratory Bird Habitat

The Central and Mississippi Flyways, extending from the Gulf of Mexico through the Great Plains of the United States and into Canada support one of the worlds most important populations of migratory waterfowl, shorebirds and cranes. Approximately 60% of all North American waterfowl (ducks and geese) and 75% of our most abundant duck, the mallard, winter in the lower Mississippi River valley, the Gulf coast and southern prairie states and in spring move north to find feeding and nesting sites on the prairies, although a few species go north to the arctic. It is important to recognize that these birds utilize landscapes at a continental scale

moving from wetlands on the Gulf Coast to the Texas playas, the Rainwater Basin of Nebraska, prairie potholes on the northern prairies and back. These wetlands are linked into one giant system. Prairie marshes provide the most important habitat for waterfowl and today's very low waterfowl populations may be explained by the fact that many prairie states, such as Iowa, have sustained tremendous wet land loss.

Waterfowl and other water birds provide an important economic stimulus for this region. Nearly 40% of all hunting occurs in wetlands and hunters spend hundred of million of dollars each year. Of Americans who enjoyed nonconsumptive wildlife associated recreation activities in 1991 nearly 40% did so in wetlands, a total of 11.7 million people. More than 80,000 people visit the Platte River in Nebraska each year to watch Sand Hill Cranes, bringing over \$15 million to the local economy. Neotropical migrant birds use riparian vegetation in the West as these are the primary deciduous forest and shrubland types.

Forage and Farming

Wetlands provide one of the most important sources of forage for livestock and wildlife in the western U.S. Most of the West is semi-arid and hay is grown primarily in high water table areas, most of which are wetlands. Almost every wetland that can be hayed or grazed is utilized and wetland hay is valued at \$30 to \$60 per ton with yields of 2-5 tons per acre, making this valuable agricultural land. In some areas wetlands have been created by the irrigation of formerly dry lands. These wetlands have many of the same functions as natural wetlands (eg. habitat and water quality improvement) and it is important to recognize that many irrigation activities were accomplished by diverting water from streams which has resulted in the loss of riparian wetlands.

The administration has proposed that 53 million acres of prior converted croplands' be no longer subject to section 404 regulation. I suggest that a watershed approach be used in agricultural areas with large wetland losses to identify critical wetland complexes for restoration to increase the landscapes function for retaining flood water, water quality improvement and habitat.

Hydrologic Functions

We know very little about which western wetlands function in ground water recharge. Prairie potholes are known to recharge local groundwater tables raise local water tables and may help recharge agricultural soil water. Many ephemeral streams in Arizona and Utah are known to recharge deep ground water aquifers.

Many western wetlands, particularly peatlands and wet meadows, tend to occur at ground water discharge sites. These wetlands provide important water quality treatment prior to this water entering surface water bodies.

Functions and Values of Western Coastal Wetlands

The Pacific Coast of the United States is a dynamic, steep and rocky coast. Most wetlands occur at the mouths of small streams, or in the relatively few large bays along the coast. The largest estuary on the west coast is San Francisco Bay, where 92% of the wetlands have been destroyed. The remaining wetlands provide important habitat and water quality functions. Coastal wetlands contain a great diversity of ecosystems including tidal marshes, tidal mudflats, eel grass beds and kelp forests, ranging from salt to brackish to nearly fresh water.

Migratory bird habitat and marine fisheries support are two of the most important functions of these wetlands. Pacific coastal salt marshes provide critical habitat for migratory waterfowl, as well as for adult and juvenile fishes of many species including herring and anchovy. Coho salmon are known to use tidal freshwater wetlands in winter. Shorebirds, clams, crabs, turbot and many other species use tidal mudflats.

TESTIMONY OF HON. DON EDWARDS, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, thank you for giving us the opportunity to testify today. We appreciate the work that this committee has done toward resolving the complex issue of how best to protect the nation's wetlands.

We would like to encourage the members of this committee to continue in their quest to strengthen federal wetlands protection efforts and provide greater certainty, consistency and flexibility to the regulatory program.

We believe that the fundamental building blocks to achieve these goals exist within the framework of the current program. A radical overhaul of the system is not needed. Rather, we support strategic improvements to key portions of the law.

The legislation that we have introduced, the Wetlands Reform Act, takes a balanced and realistic approach to this issue. We worked very hard to offer legislation that would rectify the serious shortcomings of the current system while also improving protections for wetlands. Our bill recognizes the special needs of farmers and small landowners, and seeks to move away from a strict regulatory approach to protecting wetlands.

To slow the loss of wetlands, our bill would:

- Amend the Clean Water Act to explicitly include a provision covering the protection of wetlands
- Expand the number of activities covered under the Act to include all that are harmful to wetlands
- Require better tracking and reporting on the overall impact of the permit program
- Direct more personnel and resources to the Army Corps of Engineers and the Environmental Protection Agency to allow these agencies to effectively carry out their responsibilities
- Improve the training and certification of field staff doing wetlands delineations
- Improve education and outreach programs on wetlands

The committee deserves praise for demonstrating its commitment to protecting wetlands by including many of these provisions in S. 1304. We would like to emphasize the merits of strengthening the role of the Fish and Wildlife Service and the National Marine Fisheries Service in the permit process. These agencies will help insure that resource matters are given consideration in permitting decisions when necessary.

Much of the frustration and problems experienced by those seeking to comply with wetlands regulations arises from the lack of consistency in the system, delays in decisions concerning delineations and permit applications, and too much emphasis on a regulatory approach to protecting wetlands. Our bill is designed to address these serious problems.

The definition of what is a wetland and the criteria used in delineating wetland uses must be scientifically valid and workable. The National Academy of Sciences study now underway is intended to address this issue, and when changes are made to the wetlands delineation manual, the study findings should be taken into consideration. We believe all the resource agencies should use equivalent definitions of wetlands for regulatory purposes to maintain consistency and eliminate confusion. All field staff must also be given ample and appropriate training for applying field delineation techniques.

Permit processing must be streamlined and improved to provide landowners with greater certainty and predictability. Because small landowners cannot endure long delays without economic difficulty, H.R. 350 would establish a "Fast Track Team" to process permits which would affect wetlands of one acre or less within a 60 day period.

Farmers should continue to enjoy special exemptions for agricultural uses of wetlands. H.R. 350 reinforces exemptions for normal, ongoing farming practices. In addition, it clarifies that artificial wetlands and abandoned cropland should be free from regulation.

We need to take greater advantage of the benefits that can be realized from incentive based conservation programs for wetlands. For example, the Wetlands Reserve Program, which offers direct payments and cost-sharing assistance to farmers who put their wetlands into protected easements and conduct restorations on those lands, has shown much promise as a successful incentive program. To further expand on this concept, H.R. 350 includes a section of tax incentives that will make it financially more attractive for land to be donated to qualified conservation organizations, or for activities on wetlands to be limited to compatible uses.

We are pleased that both this committee and the Administration have chosen to focus attention on resolving the complex issue of wetlands. We would like to raise certain points with regard to the approach on wetlands so far taken by the committee and the Administration.

First of all, we are particularly concerned with the amount of emphasis that has been placed on the role of mitigation banking. While we agree that mitigation can be a useful tool to inject greater flexibility into the regulatory process, we feel strongly that it must be viewed with caution.

We must not forget that when wetlands are destroyed, they, together with their unique functions and values, are lost forever. Rarely do replacement wetlands per-

form as many or even the same functions as the natural wetlands they replace. Our past record on mitigation attempts has been less than impressive, and there are doubts as to whether the science of wetlands creation and restoration is sophisticated enough to make this a safe approach.

In further exploring the potential value of mitigation, we should proceed with great care. Our legislation contains a wetlands restoration pilot program to allow the best methods and techniques for restoration to be developed and examined. It would also develop a means of evaluating the success of such projects. We encourage the members of this committee to support such a pilot program to help improve our ability to be successful in such endeavors.

We support the Baucus/Chafee approach of limiting mitigation to the restoration, and not the creation, of wetlands. We also support keeping restoration projects in the same watershed as the impacted wetlands. Another key provision that must be required is the long-term monitoring of mitigation projects to insure that they are carried out successfully. Along these lines, we feel that mitigation should be required before a permit is issued.

A second issue of concern are proposals to establish an administrative appeals process on permit decisions. We agree that landowners should not have to resort to the judicial system as their only means of appealing decisions. However, we are very concerned that, unlike the Baucus/Chafee bill, the Administration has proposed a system that would allow for appeals to be made on permit denials only, but not for permit issuances. The appeal must be open to all interested parties, such as neighboring and downstream landowners, who are affected by the permit decision. We support the Baucus/Chafee appeals system that would limit appeals to those individuals who participated in the public comment process for the permit application.

Finally, we would like to flag a provision included under the watershed management approach proposed by this committee and the Administration. As you know, we believe permit processing must be streamlined to eliminate unnecessary and costly delays. Certainly for small landowners, a lengthy permit review can make the system prohibitively expensive. That is why our legislation creates a "Fast Track" for minor permits. However, the proposals to expedite all permit decisions should not be applied too rigidly. In cases where the potential impact on wetlands is high, greater flexibility must be put in place to allow scientific analysis and review by resource agencies and the public to continue beyond 90 days if necessary.

Please keep in mind that in the drive to inject greater flexibility into the permit process, wetlands losses must not be accelerated. The policy goal of no net loss of wetlands has been widely embraced, but it is meaningless if our policy decisions do nothing to slow and eventually reverse the erosion of our wetlands base.

We commend the members of this committee for working to arrive at a consensus on this important environmental matter. Because it seeks to install flexibility into the system while also strengthening safeguards to protect wetlands, we hope you will consider the approach proposed by the Wetlands Reform Act very seriously as you finalize your legislation on wetlands.

TESTIMONY OF HON. FRANK H. MURKOWSKI, U.S. SENATOR FROM THE STATE OF ALASKA

The Baucus/Chafee Wetlands Bill, S. 1304:

- Thank you for this opportunity to testify on S. 1304.
- I appreciate the work of the Chairman and ranking member of this committee to attempt to conserve wetlands in the United States and to Improve wetlands regulation.
- However, I am concerned that some of the provisions of S. 1304 will not solve our wetlands problems in Alaska, and may in fact, make them worse.
- S. 1304 would continue "no-net-loss" plus set a long-term goal of "increasing quality and quantity of wetlands".
- No-net-less is an unnecessarily restrictive goal in Alaska. And increasing wetlands in a state that has 180 million acres of pristine wetlands doesn't make much sense.
- S. 1304 expands the definition of fill and creates additional activities in that would be regulated in wetlands such as dredging, draining, and building on pilings.
- The bill does not solve the problem of definition of wetlands or account for wide variations in abundance, function, and value. It does not account for permafrost wetlands.

- Without modification, S. 1304 will mean more of the same for Alaska—more onerous federal conditions, more compensatory mitigation, more delays. It will also mean less community expansion, less community facilities constructed, and less resource development in Alaska.

President's proposed wetlands policy:

- The President's new wetlands policy is similar to S. 1304, but it contains four significant errors which I would like to identify.
 1. The policy assumes that the wetlands regulatory program is working fine in Alaska. It is not. The President's task force on wetlands received considerable testimony from the Alaska Congressional delegation, residents of Alaska, the Native community, industry, and the Governor that all pointed out serious problems with the wetlands program.
 2. The policy rejects the "Alaska 1% rule" on the grounds that the rule would de-regulate wetlands development and 1.5 million acres of wetlands would be destroyed. In fact, the 1% rule would only remove the requirement for compensatory mitigation. Other mitigation measures such as avoidance and minimization would remain in place. Alaska's wetlands would remain regulated by the Clean Water Act and all other existing Federal, State, and local law.
 3. The policy claims that potentially all of Alaska's coastal wetlands would be destroyed if the 1% rule were adopted. This is not true. Alaska has a very effective coastal zone management program developed in accordance with the federal Coastal Zone Management Act. The CZM program was developed specifically to protect the valuable resources of the coastal zone and sets more rigorous standards for approval than the 404 program alone.
 4. And finally, the President's policy claims that if the 1% rule were adopted, it would hinder management efforts of threatened and endangered species. Again, this is not true. Nothing about exempting up to 1% of Alaska wetlands from compensatory wetlands would interfere with any management activities required by the very powerful Endangered Species Act.
- Finding a reasonable policy to allow development of a small percent of Alaska's wetlands does not equate to total wetlands destruction.

Alaska has vast wetlands and requires a different regulatory approach:

- Alaska contains 170 million acres of wetlands, Equal to the size of Texas. Alaska has 65 million acres more wetlands than all the wetlands in the lower 48 combined.
- In Alaska, if you can find land to build on, it's a wetland. Wetlands cover 45% of the surface area of the state. 74% of the non-mountainous areas of the state are wetland. On the North Slope 99% of the surface is wetland.
- Alaska is completely saturated with wetlands!!
- Many of Alaska's wetlands are permafrost wetlands of lesser value. In areas with an abundance of wetlands, uplands are often the higher value habitat.

Alaska has had very little wetlands loss.

- Alaska doesn't have a wetlands loss problem. Our wetlands are not in danger.
- Alaska wetlands have been virtually untouched by development. Total wetlands lost in Alaska is about 80,000 acres, or less than 1%, over the last 126 years.
- No other state in the nation has over 99% of its original wetlands. In fact, no other state even comes close.
- New Jersey, the next closest state has lost 9% of its wetlands. That's 90 times greater percentage loss than Alaska!! California has lost 91% of its wetlands. That's nearly 1,000 times greater percentage loss than Alaska. The national average is 53% that's 500 times greater loss than Alaska.
- At the current rate of development it would take 250 years for Alaska to develop even 1% of its wetlands.
- Compare this with the lower 48 where over 50% of the original wetlands have been lost. The Lower 48 loses over 275,000 acres per year. That's three times more acres lost in one year, than Alaska has ever lost!
- Alaska already contributes greatly to the nation's wetland resource and should not bear the burden of unnecessary wetland regulations. We do our fair share. 68 million acres of wetlands are already protected—within federal and state conservation units. These will never be developed.

The wetlands problem in Alaska:

- The current wetlands program as regulated by section 404 of the Clean Water Act simply hasn't worked in Alaska.

- Property owners in Alaska regularly experience ridiculous bureaucratic nightmares and senseless project delays. Communities cannot grow, houses cannot be built, community facilities basic for health, education, safety, and sanitation cannot be built.
- The Corps of Engineers claim they rarely deny wetlands permits. Technically that may be true. But what the Corps does, is require unreasonable permit conditioning and endlessly request additional information. Very few applicants are in the position to persevere through this onerous process. The effect is the same. Delay is the most insidious form of denial.

The current wetlands program violates the spirit of ANCSA:

- The Alaska Native Claim Settlement Act of 1971 (ANCSA) gave Native Alaskans the right to select certain lands in Alaska in exchange for extinguishing their aboriginal rights to the land. The settlement was to provide for the "real economic needs of the Alaska Natives".
- Unfortunately, the current wetlands program prevents the Natives from developing their own selected lands.

The current wetlands program violates the spirit of ANILCA:

- Land not placed in conservation units was intended to be available for development.
- Development of Alaska's abundant natural resources is the economic promise of statehood. Both the state and the nation are being deprived of the benefits of development.
- It is not right to solve the Lower 48 wetland loss problem in Alaska. Alaska should not be held hostage by the problems of the lower 48.

Wetlands legislation should recognize:

1. Wetlands vary in abundance, function, and value. Alaska has 170 million acres of wetlands, much of which is abundant, low value, permafrost wetland.
2. Regulation should be based on the extent and proportional loss of wetlands. Alaska has nearly all its original wetlands intact.
3. Credit should be given for wetlands already protected. Alaska has 68 million acres of wetlands (40%) protected in federal and state conservation units.
4. Permitting should be simplified and streamlined.
5. General permits and local government wetlands planning should be encouraged.
6. Regulations should recognize and protect the property rights of private property owners.
7. Regulations should not conflict with the economic goals of ANCSA and the multiple use promise of ANILCA.
8. States should be able to assume the federal wetlands program and manage it in a way that makes sense in that state.

Alaska needs a wetland policy that allows the continued responsible development of our abundant natural resources. Alaska has demonstrated the ability to balance environmental protection with resource development.

Solve the wetlands loss problem where there is a problem.

TESTIMONY

SUBMITTED TO

UNITED STATES SENATE

COMMITTEE ON THE ENVIRONMENT AND PUBLIC WORKS

SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE

ON BEHALF OF

THE ASSOCIATION OF STATE WETLAND MANAGERS, INC.

AND

THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES

BY

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Thank you for the opportunity to present the following comments on S. 1304 on behalf of the Association of State Wetland Managers and the Wisconsin Department of Natural Resources.

The Association of State Wetland Managers is an organization composed of professionals from local, state and federal agencies and private consultants which has as its primary interest the protection and wise management of the nation's wetlands. Our comments and recommendations are based on over 16 studies, workshops and symposia conducted by the Association since 1989 which collectively involved several thousand state and local wetland managers, wetland scientists, federal agency staff, developers and other participants (list attached).

Wisconsin has a well founded reputation and tradition of environmental protection. Wisconsin has strongly supported the Clean Water Act and the s. 404 program believing that the program complements our state and local regulations and provides comprehensive protection of Wisconsin's and the nation's valuable water resources.

We believe that s. 1304 is the first serious bill to build upon and address deficiencies in the Section 404 program. The bill will do much to implement the recommendations of the National Governor's Association and the concepts put forth by the Association. It is also consistent with the ideas and recommendations of the scientific and technical communities which we represent. Both the Association and Wisconsin strongly support wetland protection and restoration. However we have also recognized that wetland protection and restoration require the understanding and support of public and private landowners and the protection of the quality and quantity of water supplies to wetlands through watershed approaches.

We recognize that the bill raises issues within the environmental community with regard to general permits, enhanced state and local roles, advanced planning, prior converted croplands, mitigation banks and perhaps other matters. We believe that these topics must be approached with great care, but we also believe that after 21 years with a Section 404 program which really does not protect many wetlands it is time to try some new partnership approaches and to better address landowner needs. These are keys to actual protection and restoration of wetland ecosystems.

Today, in addition to providing general support for S. 1304, I would like to briefly address seven areas of this legislation and close with some thoughts on wetlands, this bill and flood damage reduction:

1. Programmatic General Permits - The specific authorization in S. 1304 for state and local programmatic permits clarifies ambiguities about general permits under current regulations. The Association strongly supports the use of programmatic permits where the state or local program meets or exceeds federal regulatory standards. My state, Wisconsin, is now entering its eleventh year with a state program general permit that has reduced regulatory duplication while helping to provide greater certainty, predictability, fairness, and flexibility for our citizens.
2. State Conservation Plans - This is a very positive proactive approach that can initiate useful changes to managing wetland resources, especially when combined with Wetlands and Watershed Management Plans.
3. Wetlands and Watershed Management Plans - For reasons discussed in a brief paper attached to the testimony, advance planning in a watershed context of the sort encouraged by this bill is needed to help resolve many of the severe problems and conflicts in the protection and management of freshwater and estuarine wetlands now facing the federal agencies, states and local governments. Such advance planning is needed to meet private and public landowner and developer needs for more certainty, predictability, flexibility and lower costs in wetland regulation.
4. 90 Day Decision Deadlines - While the Association supports timely decision making, the inadequacy of many of the permit applications presently submitted raises some concerns on how this provision of S. 1304 will be implemented. The Corps is limited by regulation on what they can request from an applicant prior to issuing a public notice. We would strongly recommend that language be added to make certain that the 90 day time clock does not start running until adequate information to assess the impacts of the proposed action is in hand.
5. Agricultural Activities - We support the intent of this section of the bill. However, we believe that the existing abandonment provisions for prior converted wetlands should be maintained. Also the ability of the Soil Conservation Service to carry out this mandate in terms of resources and expertise is questionable. Training of SCS personnel at the county level is absolutely critical.
6. Mitigation Banking - The Association supports the requirements for the establishment, use, maintenance and oversight of banks relying on practicable and scientifically sound methods. However the bill does not, but should, include the explicit sequencing (avoidance, minimization, and then mitigation) language, as now found in the 404(b)(1) guidelines as recommended by the National Governor's Association and the Association. This is critical for the appropriate use of mitigation banks. Also, we question the creation of wetlands as an effective mitigation technique.
7. Funding - The funding mechanisms provided in the bill include section 104, 106(h), 205(j), 319(e) and 604(b). These funds have become increasingly competitive as they are used to support multiple Clean Water Act programs. Congress must be willing to financially support the excellent intentions of this bill.

The Association and the Association of State Floodplain Managers recently conducted the first of two meetings in St Louis on Post Flood Recovery and Restoration of Mississippi River Floodplains and Wetlands. The second meeting will be September 27-29 and I invite you and your staff to attend. Many of the provisions of this bill- state wetland plans, watershed management plans, programmatic general permits and mitigation banking - will be important tools to accelerate the restoration and protection of open, wetland, bottomland, backwater and floodplains area important to water retention and slow release of floodwater.

In summary, we believe this bill will help create an effective national wetland regulatory program that is integrated with other Clean Water Act goals and programs. It will achieve this by creating new federal, state and local partnerships to evaluate, plan and regulate wetlands on a watershed basis as part of broader water resources systems.

BASIS FOR RECOMMENDATIONS: RECENT MEETINGS OF THE ASSOCIATION OF STATE WETLAND MANAGERS

July 1989 - June 1993

International Symposium: Wetlands and River Corridor Management, July 1989.

This meeting held in Charleston, South Carolina, was attended by 380, and included representatives from 20 countries. Presentations addressed river and stream corridor management, including the adjacent riparian and estuarine wetlands, from a natural systems protection and restoration perspective. A proceedings book prepared.

Implementing No Net Loss: Issues and Options for the States, November 1989.

This Washington, D.C. meeting drew approximately 200 individuals from 45 states. A variety of concerns about the no net loss goal were raised, and many specific recommendations for implementation were made by attendees.

Translating No Net Loss Into Regulations, November 1989.

The Association cooperated on this meeting that was conducted and hosted by the New Hampshire Wetlands Board in Manchester, New Hampshire. About 200 people attended.

No Net Loss and the Role of Restoration/Creation, April 1990.

This Association meeting was hosted by the U.S. Army Waterways Experiment Station in Jackson, Mississippi. About 430 participants. Many of the papers presented are in the new Island Press/E.P.A. publication: *Wetland Creation and Restoration: Status of the Science* edited by Jon Kautler, ASWPM, and Mary Kenneth, E.P.A.

Urban Stream and River Corridors: A Multiobjective Management Symposium, April 1990.

The Portland (Oregon) Audubon Society presented this meeting; the Association cooperated. Topics addressed included multi-objective management and restoration of urban streams, river corridors, and wetlands. There were 680 attendees and speakers.

International Symposium: Wetlands of the Great Lakes, May 1990.

Approximately 200 attended this meeting in Niagara Falls, New York. Half of the speakers and attendees were from the U.S., and half from Canada. The focus of the program was on techniques to better protect and restore Great Lakes Wetlands in both the U.S. and Canada.

Federal Wetland Delineation Manual Training Workshop, September 1990.

This "training the trainers" delineation course for the states was conducted in Zion, Illinois. The program had 30 participants from 23 states. Problems and issues with the Federal Wetland Delineation Manual were also addressed.

State Wetland Workshop: Addressing Critical Issues - Federal/State Coordination and Cooperation, September 1990.

This Washington, D.C. meeting focused on emerging issues in federal/state wetland programs. It identified new directions and innovative approaches in state programs, and made recommendations for improving federal/state coordination and cooperation. There were 30 representatives from various states, although not all states participated.

International Symposium: Ecotourism and the Conservation of Natural Resources, November 1990.

This meeting was held in Miami Beach, Florida, and attended by over 400 individuals from 30 countries. The meeting focused upon opportunities for reconciling resource protection with economic development.

National Workshop on State Wetland Regulations: Wetlands and Water Quality, Clean Water Act Reauthorization, and State Wetland Delineation Manual, May 1991.

This three day in-vitational workshop held in Wilmington, Delaware was attended by 130 individuals from 25 states.

National Symposium and Annual Meeting: Regulation of Altered, Artificial, and Managed Wetlands, September 1991.

This meeting held in Chicago, Illinois, focused on the difficult technical and policy issues in regulating altered, artificial, and managed wetlands with special emphasis on agricultural wetlands. About 300 people attended.

Strengthening State/Federal Wetland Protection and Restoration in Water-Scarce Regions, March 1992.

The goal of this meeting attended by 30 people held in Houston, Texas, was to identify approaches for the states to strengthen wetland and riparian habitat protection and restoration in cooperation with the federal government, and the private sector.

State Perspectives on Wetland Classification, March 1992.

This technical workshop with 60 participants from 23 states was held in Washington, D.C.

Wetland Delineation: Drafting a State Wetland Delineation Manual or Revising the Proposed Federal Wetland Delineation Manual, March 1992.

This technical workshop with approximately 100 participants from 22 states was held in Washington, D.C. in death with wetland delineation.

National Wetland Symposium: Effective Mitigation: Mitigation Banks and Joint Projects in the Context of Wetland Management Plans, June 1992.

The focus of this meeting held in West Palm Beach, Florida, was on mitigation banks and joint projects in the broader context of wetland management. There were 375 attendees.

Wetlands and Watershed Management, 1992.

A series of five workshops with 600 participants were conducted in the fall of 1992 and spring of 1993 by the Association or by cooperating parties in conjunction with the Association in West Palm Beach, Florida; Eugene, Oregon; Niagara Falls, New York; Atlanta, Georgia; and Reno, Nevada.

Annual Membership Meeting and International Wetland Symposium: Improving Wetland Public Outreach, Training and Education, Interpretation, June 1993.

The goal of this symposium was to improve wetland regulatory, planning, land management and other wetland conservation efforts through improved wetland education, interpretation, training, technical assistance, and other outreach efforts. There were 150 attendees.

PART 1: WHY WETLANDS AND WATERSHED (WATER RESOURCES) MANAGEMENT IS NEEDED

For reasons which will be discussed shortly, advanced planning of wetlands in a watershed context is needed to help resolve many of the severe problems and conflicts in the protection and management of freshwater and estuarine wetlands now facing the federal agencies, states, and local governments.

Such advanced planning is needed to meet private and public landowner and developer needs for more certainty, predictability, flexibility, and lower costs in wetland regulation. (See Table 1.) Such advance planning on a hydrologic unit basis is also needed to improve the rationality and coordination of wetlands and other water management programs, reduce cumulative impacts and degradation, lower the costs, and help balance environmental and economic needs including the rights of private landowners. Such advanced planning is needed to meet the needs of environmental organizations, land trusts, and other groups interested in no net loss of wetlands, net gain of wetlands, and achievement of broader environmental goals (e.g., restoration of water quality, protection of endangered species) by reducing cumulative losses, improving the efficiency of wetland management programs, and providing the basis for successful wetland restoration efforts.

Background: Expansion of Wetland Programs In the Last Decade

Over the last decade, wetland protection, regulation, and management efforts across the nation (the federal Section 404 program, state and local programs) have been expanded from a focus primarily upon coastal and estuarine wetlands and freshwater wetlands adjacent to major lakes and rivers to broader programs that address to isolated wetlands throughout the landscape, and many wetlands along creeks, streams, and smaller lakes and ponds.

There are hundreds of thousands (and perhaps millions) of such isolated wetlands and wetlands adjacent to smaller water bodies throughout the United States, particularly in Alaska, the northern glaciated states (Maine to Washington), states with slow-moving and low gradient rivers with large floodplains (e.g., Mississippi and Louisiana), and states with moderate to high rainfall and large areas of relatively flat topography (e.g., Maryland, South Carolina, and western New York). These wetlands include vernal pools and playas in the West, permafrost wetlands in Alaska, "slope" wetlands in the mountain states, "prairie pothole" and "kettle hole" wetlands in the midwest and throughout the northern states, "sink hole" wetlands in areas of karst topography such as Kentucky, pocosins in the Carolinas, and the narrow ribbons of wetland and riparian habitats along the millions of miles of smaller rivers and streams throughout the United States.

These wetlands include much of the estimated 50 million plus acres of partially drained agricultural wetlands. They include many stormwater detention facilities (which have inadvertently become wetlands) and wetlands created by artificial blockage of natural drainage by roads, railroads, bridges, dikes and levees, and other fill and grading operations.

The total number of these wetlands is enormous and the collective acreage of these wetlands is great but their impact upon land use decision-making is even greater. Because they occur in depressions and poor drainage areas throughout the landscape and along the network of minor rivers and streams in which transecting parcels are used or intended for use for subdivision, road building, agriculture, and other purposes.

Why a Watershed Approach is Particularly Needed for Isolated Wetlands and Wetlands Along Smaller Creeks, Streams, Ponds, and Lakes

Water is, of course, the key to all wetland characteristics including wetland functions and values. "Wetlands" are wetlands only if they are, in fact, "wet" and remain periodically wet over time.

As in shallow water or high groundwater systems, all wetlands are susceptible to changes and fluctuations in water supply and water quality. Wetlands differ from other water bodies such as lakes, streams, and reservoirs in that they are shallow water systems and are quite often dry at least a portion of the time. Because they are shallow water systems, even relatively small fluctuations in ground and surface water levels (less than a foot) greatly affect wetland vegetation and animal species, wetland functions, and even, in some instances, the very existence of the wetland. In contrast, water levels in a lake or stream may fluctuate several feet with little change in the appearance of the lake or stream.

Coastal wetlands, estuarine wetlands (to a lesser extent), and wetlands adjacent to major rivers and lakes are less sensitive changes in the immediate watershed including local allocations of water because the water in the wetland is often derived primarily from the adjacent water body. In the case of tidal wetlands and (to a lesser extent) estuarine wetlands, the source of the water--the tides--and water levels are quite regular although storm surges and long-term changes in sea level do occur. In the case of major rivers and lakes, water supply and water levels are also relatively constant and predictable although they also fluctuate seasonally and are also dependent upon what happens in larger watersheds.

Case-by-case regulatory approaches not utilizing a watershed concept and applied in the Section 404 program and state and local wetland regulatory programs have worked moderately well for coastal wetlands and wetlands along major rivers and streams with relatively constant and ascertainable water supply but they work much less well for isolated wetlands and wetlands along smaller creeks, streams, lakes, and ponds for the following reasons:

1. The water levels in isolated wetlands and wetlands along smaller creeks and streams often fluctuate widely on a seasonal basis and even more dramatically over a period of years in response to long-term precipitation cycles. Wetland vegetation and, in some instances, wetland soils change in response to such fluctuations. Because of these changes in water levels and vegetation the appearance of these wetlands and their use by various wildlife also changes. Short-term functions and values also change. During dry periods, landowners often fail to perceive these areas as wetlands.

2. Isolated wetlands and freshwater wetlands along smaller rivers and lakes are particularly dependent upon what happens in their immediate watersheds. The water in isolated freshwater wetlands, wetlands along rivers and creeks and to a lesser extent, estuarine wetlands, comes from precipitation. This precipitation reaches wetlands through a combination of direct precipitation surface runoff from immediate watershed and groundwater infiltration. There is often little opportunity for offsetting watershed influences as with larger rivers, streams, and lakes.

3. Activities throughout watersheds affect the amount of flow into a wetland, the velocity of the flow, the timing of the flow, and other features determine the short- and long-term characteristics of freshwater wetlands. What happens in a watershed not only determines existing features of an isolated wetland or a wetland along a smaller creek or stream but future characteristics including functions and values. For this reason, wetlands are highly vulnerable to dikes, dams, or levees, water diversions for agriculture or domestic water supply, or groundwater pumping. Wetlands are vulnerable to land-clearing and urbanization, which increases the total amount of runoff and peak runoff. Wetland protection and management becomes integrally interrelated with other watershed-based land and water management programs including water supply, stormwater management, floodplain management, and point and nonpoint pollution control efforts.

Problems With Lack of a Watershed Approach

Wetlands are now typically regulated in federal, state, and local regulatory efforts as separate, distinct entities without regard to their role as part of broader water systems. Obvious and well-established hydrologic features of wetlands are often ignored in efforts to delineate, classify, evaluate, protect, restore, create, or otherwise manage wetlands.

The failure to interrelate and the management of wetlands along smaller lakes, streams, and lakes with watershed management has resulted in a variety of problems:

1. Wetlands are not being protected despite expenditures of large sums of private sector and public sector money. The goals of permitting, restoration, etc. are simply not being achieved in many instances. The reason is that you cannot protect isolated wetlands along smaller rivers and streams by regulating only the wetlands and not the activities affecting water quantity and quality. This is particularly true for regulatory efforts such as the Section 404 program, which regulates only fills.

Fills are the major threats to many coastal and estuarine wetlands and wetlands adjacent to other water bodies. Such wetlands are not easily drained because the source of water is adjacent to a water body. Even if you dig a ditch in the wetland, the water level will continue to be approximately that of the adjacent water body. In contrast, isolated wetlands can be drained. Drainage is not regulated. Beyond this, diversions and groundwater pumping are not regulated.

2. **Cumulative impacts are not being addressed.** Freshwater wetlands are gradually (and sometimes not so gradually) destroyed by groundwater draw-down, diversions, drainage ditches, and other activities that disturb natural water levels.

3. **Landowners are subjected to a variety of confused and uncoordinated regulatory requirements--floodplains, stormwater, water supply, point and nonpoint source, grading, etc.** Overlap in programs and efforts is common.

4. **Outright conflicts occur in water-related programs in some instances--stormwater, water quality, wetland protection.** See discussion below. There are no conflict resolution mechanisms in place. This results in complaints and opposition to all programs.

5. **Evaluation of functions and values is inaccurate and may have already been taken beyond rational extremes without consideration of watershed factors.** It is very difficult to determine the functions of altered, artificial, and managed wetland systems without knowing the short-term and long-term water regime since all functions and values depend upon this regime. Increasingly sophisticated evaluation methodologies are a waste of money if they fail to take into account what has happened and what will happen to the most basic attribute of wetlands--the water.

6. **Money is not being spent effectively.** Instead of focusing on short-term and long-term hydrology, many regulatory permitting efforts and restoration efforts focus on existing vegetation--a poor long-term indicator of functions or values.

7. **The relationship between wetlands and other waters is not properly considered despite the dependence of most wetland functions and values upon these interrelationships.** In addition, the relationship between wetlands and uplands is not considered.

8. **Mechanisms are not available to resolve on-site/off-site disputes for mitigation, in-kind and out-of-kind.** Areas with the highest restoration potential are not being identified.

9. **Restoration projects are simply not working despite expenditures of large amounts of money.** Historical water regime is not adequate for wetland restoration unless the water regime is restored. Restoration is dependent upon continued water supply, adequate water quality, low velocities, low sediment, and continued pulsing or active management.

Where a Wetlands/Watershed Management Approach is Particularly Critical

A wetland/watershed approach is particularly critical when water regimes have already been changed or are changing due to urbanization, clearing, groundwater pumping, water diversions and water supply, and other activities including:

- ◆ (a) Urban areas and other areas of intensive land development;
- ◆ (b) Agricultural areas;
- ◆ (c) Areas where restoration is proposed including cooperative projects and mitigation banks; and
- ◆ (d) Areas where water is scarce (e.g., much of the West) and much of the existing water is appropriated for various activities.

TABLE 1**Goals of Wetland/Water Resources Management Plans**

- ◆ Improve water/wetland resource protection and restoration, and
- ◆ Provide greater certainty, predictability, flexibility and lower costs for landowners.

TABLE 2**Landowner Benefits of Wetlands and Watershed Management Plans**

Overall benefit: more predictable, more certain, more rational, less duplicative, more integrated, and more flexible wetland/water resources regulations.

More specific benefits include:

- ◆ 1. Helping landowners simultaneously address floodplain, stormwater, water supply, point and nonpoint pollution control, sediment control, wetland protection, and other planning and regulatory requirements.
- ◆ 2. Helping landowners predict natural hazards and off-site impacts and determine whether wetland alteration all cause nuisances and potential law suits.
- ◆ 3. Helping landowners and their consultants delineate wetland boundaries, particularly with regard to altered systems.
- ◆ 4. Helping landowners determine appropriate wetland/water management needs.
- ◆ 5. Facilitate use of regional mitigation banks and cooperative ventures.

TABLE 3**Resource Conservation Benefits of Wetland Management Plans**

Overall benefit: Better protection and restoration of wetlands/waters by predicting and protecting wetland water supply and water quality and integrating wetland protection/restoration into broader water management efforts.

More specific benefits include:

- ◆ 1. Better addressing cumulative impacts.
- ◆ 2. Providing a more rational basis for delineating, evaluating, and managing wetlands consistent with wetland characteristics.
- ◆ 3. Providing a more integrated and cost effective approach to wetlands, stormwater, floodplain management, water supply, etc.
- ◆ 4. Bringing key actors into the wetland management process.
- ◆ 5. Identifying prime restoration needs and areas; help resolve disputes over on-site/off-site and in-kind/out-of-kind mitigation.
- ◆ 6. Improving the success of restoration efforts.
- ◆ 7. Identifying opportunities for regional restoration efforts including mitigation banks and cooperative mitigation ventures.

**TESTIMONY OF LANGDON MARSH, EXECUTIVE DEPUTY COMMISSIONER,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION**

Good morning and thank you for the opportunity to share my views on wetlands conservation. I am Langdon Marsh, Executive Deputy Commissioner of the New York State Department, of Environmental Conservation, the agency with primary responsibility for wetlands management in New York. I also had the privilege of working with the National Governors' Association and was Chairman of the NGA staff working group that developed the wetlands policy endorsed by the governors in February 1992. I am testifying today on behalf of NGA and the State of New York.

I would like to start by saying how pleased we are by S. 1304. I commend Senators Baucus and Chafee for drafting and introducing this bill. It is viewed by many as an honest, fresh attempt to address the real issues facing wetlands conservation and regulation. This bill confronts and addresses the problems related to protecting our wetlands heritage. We are proud at NGA and in New York State to have helped develop recommendations that are reflected in this bill.

We are also pleased that the policy recently released by the White House is consistent with the direction of this bill. With the administration and congress so closely aligned, we are optimistic that progress on wetlands protection can be made.

As you know, the governors have recommended that any wetlands strategy incorporate five general principles: first, protection efforts should be coordinated to make the best use of scarce resources and minimize inconsistencies among Federal, State, and local programs. Second, Wetlands Management should be integrated with other resource management programs such as Flood Control and Nonpoint Source Pollution Control. Third, wetlands delineation criteria and policies should recognize the significant regional variance in the resource. Fourth, land use regulation is traditionally a state and local function and a wetlands regulatory program should be designed to facilitate state assumption. And finally, the governors believe there should be recognition of the unique situation encountered by the state of Alaska Wetlands Constitute as much as 75 percent of the landscape. Government agencies and stakeholder groups should work cooperatively to develop regional wetlands strategies that for that state. Accommodate sustainable wetlands protection and economic growth.

As States, we are reassured that congress recognizes that State and local governments can be partners and viable players in wetlands protection. Because they often have regional offices that are close to the wetlands resources, States are better positioned than the Federal Government to provide program services. In addition, they can often respond to the regulated community in a more timely and predictable manner.

Of course, the abilities and interests of the 50 states and thousands of localities vary considerably, but states and local governments should be encouraged to participate to the degree they can.

We are aware that some parties in the debate are wary of stronger state and local involvement, fearing that a loss of wetlands protection will result. This will not be the case. We welcome a strong Federal framework and close cooperation to ensure a strong program, but it is likely that the states and localities that choose to become involved will do so to strengthen protection or to improve delivery of the program. Consistent federal oversight will ensure that wetlands do not fall victim to local politics in the future.

We also welcome provisions of S. 1304 that endorse programmatic general permits; support and fund state comprehensive wetlands conservation plans and regional watershed-based plans; and ensure state representation on the interagency coordinating team. I note that the bill is silent on program assumption, however. Whereas most of the problems with assumption are regulatory and not statutory, we strongly recommend authorizing full or partial program assumption. States should be permitted to assume discrete and clearly identifiable portions of the section 404 program as they develop the capability to do so rather than requiring the entire program to be delegated at one time. There may be situations where wetlands program jurisdiction is shared within a state, as in New York where authority is shared between my Department of Environmental Conservation and the Adirondack Park Agency. Other states may choose to focus on a particularly sensitive or important subset of its statewide resource. These efforts should be fostered, not constrained.

Although many people do not think of New York as an agricultural area, farming is still the number one industry in our predominantly rural state. We are pleased to note the many provisions of S. 1304 that will decrease the conflict that has historically occurred between wetlands protection and agriculture. Provisions to increase

coordination with the Secretary of Agriculture, for example, should prevent problems from occurring by considering the impact of new policies on agriculture early on. We support exempting from the definition of wetlands prior converted croplands and certain artificial wetlands created incidental to agriculture. We also support continuing the exemption for ongoing agriculture practices.

Because it is important to view farmers as partners in wetlands protection, these provisions are particularly important. In addition, we are pleased that congress has chosen to expand the Wetlands Reserve Program, supported by us and the White House policy, to create a National cooperative wetlands restoration strategy. We recommend, however, that the restoration strategy complement and not replace the wetlands reserve program.

Perhaps the types of provisions that will be most welcome by the majority of the affected public will be those that provide for regulatory reform. NGA, and we in New York, have supported efforts to make the regulatory process fair, reasonable, and predictable, believing that the vast majority of the people prefer to comply with wetlands protection efforts if they can understand what is required and expected of them. We have recommended some of these changes in the past and are pleased they appear in the bill. They include creating reasonable timelines for permit review; establishing an administrative appeals process; and supporting mitigation banks. Other changes proposed in the bill that we believe are creative and welcome additions include providing training and assistance to small landowners on delineation; creating an available index of all regulatory documents; and requiring the agencies to assess their needs so that an efficient program can be designed.

Beyond efforts to improve delivery of a strong regulatory program, S. 1304 also strengthens wetlands protection. It endorses the no net loss goal; clarifies the definition of wetlands; expands the list of activities subject to jurisdiction under section 404; and more clearly defines what is "fill." We do believe that watershed-based planning for wetlands also will greatly enhance wetlands protection in the long term. My fellow colleague from Oregon will be speaking in more detail about watershed and local wetlands planning, but I want to express my strong support for these provisions in the bill. I understand that local and regional wetlands planning has been characterized by some as an effort to weaken rather than strengthen wetlands protection. I cannot disagree more. Absent a context for wetlands decision making, we will continue to see cumulative losses and will not have the proper perspective for functional assessments and mitigation.

In spite of our enthusiasm for S. 1304, we are disappointed that the bill does not contain explicit language governing sequencing of mitigation requirements. We believe it is critically important first to always avoid impacts to wetlands, then to minimize any impacts that cannot be avoided, and finally to offset any remaining impacts through compensatory mitigation such as restoration or creation of wetlands. Without an explicit declaration in the statute of these sequencing requirements, we fear that too often the process will jump to compensatory mitigation when, in fact, the impact may have been avoidable altogether. We do believe some flexibility must be available—which is best defined through watershed or regional plans—but we strongly urge that sequencing be followed whenever possible.

In closing, I would like to reiterate that we are encouraged by the similarities between S. 1304 and the White House Wetlands policy. Some provisions are explicitly similar, such as using the current EPA definition of wetlands; endorsing state wetlands conservation planning; and exempting prior converted croplands. Others are conceptually similar: providing timelines for permit reviews; increased outreach to educate the affected public; and continued use of the 1987 manual. I urge congress and the administration to continue this cooperative approach and to aggressively seek to move wetlands protection forward and out of the morass of conflict that has consumed it for the past several years. On behalf of New York and other states, we welcome the new spirit of cooperation and partnership with the states, and look forward to helping deliver a stronger wetlands program.

Thank you. I welcome any questions you may have.

Testimony provided by Mark Latch, Director, Division of Water Management, Florida Department of Environmental Protection to the Senate Committee on Environment and Public Works, Subcommittee on Clean Water, Fisheries and Wildlife -- 9/15/93

Good morning/afternoon, my name is Mark Latch and I am the Director of the Division of Water Management in Florida's Department of Environmental Protection. The Department is the lead state agency for permitting of activities impacting waters and wetlands. We are also seriously considering state assumption of the Clean Water Act Section 404 permit program. For these two reasons, we have a vital interest in reauthorization of the Clean Water Act, specifically as it relates to Section 404.

Florida has an extremely active wetlands permit program based on regulation of wetlands impacts through the dredge and fill program and regulation of the management and storage of surface water. Authority for these two programs is split between the Department and five regional Water Management Districts. Recent interagency agreements and legislation have resulted in the first steps toward streamlining these regulatory programs into a single decision making process and developing a statewide wetlands delineation methodology. The intent is that when the streamlining process is completed an applicant will deal with a single agency for all wetland permits required under state law. To further this streamlining initiative, the state requested and received funding from EPA to investigate the feasibility of assuming the Section 404 permit program and, potentially, develop an assumption package.

However, based on the work conducted to date, we find that a State Programmatic General Permit may be a more attractive alternative for the Florida program. Given the current statutory restrictions on assumption, that are contained in the Clean Water Act, it is not possible to develop an assumption package for a comprehensive statewide program such as Florida's. We have proposed the following language to the Florida delegation to amend the Clean Water Act. We think this language will remove some of the impediments to assumption.

1. This amendment removes the prohibition on states assuming the federal dredge and fill program for navigable waters. Without this amendment, the state would not be able to assume the federal program in large portions of the state. In addition, because the boundaries between navigable and non-navigable waters are not clearly defined in many waters, assumption would add a step to determine which agency had jurisdiction. Both of these factors would severely impede the goal of establishing a procedurally simplified program. Permits required by Section 10 of the Rivers and Harbors Act will still be required for construction in navigable waters, but could be reviewed under a State Program General Permit or nationwide Permit that is based on proper review of navigational issues in the 404 permit.

Section 404(g)(1) is amended by striking language as

follows:

(g)(1) The Governor of any State desiring to administer its own individual and general permit program for the discharge of dredged or fill material into the navigable waters ~~(other than these waters which are presently used, or are susceptible to use in their natural condition or by reasonable improvement as a means to transport interstate or foreign commerce seaward to their ordinary high water mark, including all waters which are subject to the ebb and flow of the tide seaward to their mean high water mark, or mean higher high water mark on the west coast, including wetlands adjacent thereto)~~, within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the attorney for those State agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State or the interstate compact, as the case may be, provide adequate authority to carry out the described program.

2. This section amends the Act to remove the current five year limitation on state-issued 404 permits. There is no similar limitation on the issuance of 404 permits by the Corps of Engineers. Florida law allows issuance of 25 year permits with a five year review. This amendment allows issuance of permits in the same manner as current Florida law. There does not appear to be any need to limit the term of permits to five years as long as periodic review, with the addition of applicable new requirements, is required.

Clause (ii) of Section 404(h)(1)(A) is amended to read as follows:

"(ii) shall be -

"(I) issued for fixed terms not exceeding 25 years; and

"(II) if issued for a term that exceeds 5 years, reviewed by the State not later than 5 years after the date of issuance and every 5 years thereafter for the duration of the term to ensure that the conditions of the permit are being met by the permittee and to consider, and include as permit conditions where appropriate, all applicable rule requirements adopted during the prior 5 year period.

3. The current Act requires that as soon as a state program is approved, all pending applications are transferred to the state. This has been termed the "clean break" provision. However, a clean break will have adverse impacts on the state, the Corps of Engineers and applicants. The immediate transfer of large numbers of

permits that have been processed in part by the Corps of Engineers to new processors could potentially overwhelm the state system. State processors would be taking on a large number of permit applications at various stages of preparation. This will likely result in delays for applicants while the state processors become familiar with applications on which the Corps of Engineers personnel have already spent considerable amount of time. In addition, the sudden transfer of the permits would not allow the Corps of Engineers adequate time to adjust personnel to other tasks and allow for phase out of positions, should that be necessary. This proposed provision will allow the Corps of Engineers to complete the processing on applications that are already before them and the state would be responsible for the new applications that were submitted. This is especially important in states such as Florida in which there are large numbers of applications for permits pending at any one time. However, the same rationale would apply to other states as well.

The other amendment to this section provides for the Corps of Engineers to continue monitoring, enforcing and issuing any modifications of previously issued Corps of Engineers permits. The justifications for this provision are similar to those expressed above for processing permit applications. The Act does not specifically assign the responsibility for continued administration of previously issued permits. Allowing the Corps of Engineers to retain responsibility for such activities would relieve the potentially excessive burden on the state in enforcing unfamiliar permits, provide for a smoother transition for the Corps of Engineers, and afford applicants better continuity by allowing them the ability to deal with the original permitting agency.

Paragraph (4) of Section 404(h) is amended by striking and adding language as follows:

(4) After the Secretary receives notification from the Administrator under paragraph (2) or (3) of this subsection that a State permit program has been approved, the Secretary shall transfer any applications for permits ~~subject before the Secretary for activities with respect to which a permit may be issued pursuant to such State program and received after such notification~~ to such State for appropriate action. The Secretary shall retain the authority to administer and enforce the permits issued by the Secretary, including the authority to issue and enforce modifications thereto.

We also propose changes to the language regarding general permits allows the Corps of Engineers to enforce and administer previously issued permits. The language is similar to that proposed for individual permits. The same rationale as was given for individual permits supports this provision.

Paragraph (5) of Section 404(h) is amended by striking and adding language as follows:

(5) Upon notification from a State with a permit program approved under this subsection that such State intends to administer and enforce the terms and conditions of a general permit issued by the Secretary under subsection (e) of this section with respect to activities in such State to which such general permit applies, the Secretary shall suspend the issuance ~~administration and enforcement of such general permit with respect to such activities but shall retain the authority to administer and enforce the general permits previously issued by the Secretary with respect to such activities.~~

4. This amendment allows the Administrator the ability to overlook minor differences in the proposed state program so long as the effectiveness of the protection of waters of the United States is not impaired. If the program does not differ from the requirements, the Administrator is not required to make an explicit determination as the requirements are designed to ensure parity of programs.

Paragraph (6) is added to section 404(h) to read:

"The Administrator may approve a program submitted under subsection (g)(1) that varies in minor respects from the requirements of this section if the Administrator determines, after review of the proposed state program, that the proposed state program will afford the same or greater degree of protection to waters of the United States as the federal program affords."

5. This amendment provides funds to allow for the start up of the program by a state. The expenses incurred by an assuming state program for training personnel, adopting procedures and providing facilities and equipment to handle the new program will be significant. The states will need assistance to carry out all of the activities required for the transfer of the program and setting up the needed coordination with federal agencies.

Paragraph (6) of Section 404(h) is continued to read:

(A) IN GENERAL. - The Administrator of the Environmental Protection Agency is authorized to make a grant to any State that has received approval for an individual or general permit program for the discharge of dredged or fill material into navigable waters pursuant to section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1344).

(B) USE OF GRANTS. - Amounts of a grant made to a State under subsection (A) may be used by the State only for covering administrative and other expenses associated with commencing the implementation of a permit program described in subsection (A).

(C) AUTHORIZATION OF APPROPRIATIONS. - to carry out

this section, there are authorized to be appropriated to the environmental protection agency \$1,000,000 for fiscal year 1994 to remain available until expended.

These amendments would go a long way toward making assumption of the Section 404 program more attractive to Florida and other states. Given the experience of Florida and other states that have considered assumption, we would also suggest that consideration be given to clarifying the relationship between federal endangered species protection statutes and state assumed Section 404 permit programs. Protection of endangered species is a major emphasis under the existing Florida program. However, should we assume the Section 404 program, we are concerned that current federal statutes and policies may result in an excessive federal agency coordination burden on the state with no increase in endangered species protection.

Thank you for the opportunity to comment on Florida's concerns with respect to the Clean Water Act reauthorization.

We understand that there are currently two bills filed that deal with Section 404 of the Clean Water Act. Department staff has reviewed S. 1304 and we offer the following comments for the record. We received a copy of S. 1195 late last week and were not able to complete our review in time for this hearing. We will submit S. 1195 comments as soon as possible.

The amendments to the Clean Water Act proposed by Senators Baucus and Chafee in S. 1304 codifies many of the components included in President Clinton's recently announced wetlands initiative. In general, the bill includes good measures for the effective and efficient protection and regulation of wetlands and is strongly endorsed by the state of Florida. The specific comments that follow relate to areas of the bill that will have an effect on the state's protection of wetlands, our efforts to reduce the duplication between the state and federal wetland regulatory programs, and other comments based on our experience with wetlands regulatory programs.

SEC. 3 DECLARATION OF POLICIES AND GOALS

The proposed language, (3)(8), does not emphasize the enhancement of degraded wetlands or the need to increase the extent of and prevent the overall net loss of functional wetlands. We suggest the language be revised as follows:

"It is the national policy to achieve, through regulatory and non-regulatory strategies involving all levels of government--

(A) the restoration and enhancement of degraded wetlands to increase the quality and quantity of the functional wetland resources-base of the United States; and

(B) no overall net loss of the remaining functional wetlands resource-base of the United States."

SEC. 4 DEFINITION AND DELINEATION OF WETLANDS

We concur with the position of the bill that the 1987 Federal Manual should be used in the interim period while the National Academy of Sciences studies the issue of wetland delineation. The 1987 manual provides sufficient flexibility so that it can be used to achieve accurate wetland delineations in Florida. However, the 1987 hydrology criteria is much too long (12.5% of the growing season or about 45 days in Florida). We feel that the appropriate hydrology criteria is that which results in the development of hydric soils. Therefore, a more appropriate number for the hydrology criteria would be 7 continuous days of inundation or 14 or more continuous days of saturation. We also strongly concur with the portions of this section that require that the new guidelines issued be developed in consultation with the States, and take into account regional or state variations in hydrology, soils and vegetation. This is critical to developing a wetland delineation methodology that is accurate nationwide. The previous methodologies did not allow for regional variation.

Additional examples of wetland types should be added to reflect the type of wetlands that occur in Florida. It is specifically suggested that the following wetland types be added: hydric seepage slopes, bayheads, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, tidal marshes, and mangrove swamps.

The proposed annual \$5,000,000 taxpayer subsidy to private landowners who "lack the financial capacity to identify or delineate wetlands in order to apply for permits...or to avoid impacts to wetlands" has the potential of serious abuse and diverts scarce federal resources from existing wetlands delineation programs. This approach is particularly troubling since the Corps currently does not charge a fee for wetland delineations. Further, the 90 day time clock for wetland delineations, may be an unreachable goal depending on staff resources and workload. We suggest that, at minimum, the time clock only apply to complete requests.

SEC. 5 REGULATION OF ACTIVITIES

This section makes changes to the activities that are regulated, and appears to close some existing loopholes in the federal program. The new definition of "fill material" appears to include pilings (although this is not explicitly stated), which were not previously covered. Previously, projects designed to circumvent the regulations, such as development built on pilings rather than fill, could not be regulated. This change makes the federal program more consistent with Florida's program.

The new definition of "discharge of dredged or fill material" now appears to include excavation in wetlands (although in a somewhat convoluted manner) and closes

another loophole in the existing federal program. This change makes the federal program more consistent with Florida's program.

SEC. 6 PERMIT PROCESSING IMPROVEMENTS

This section requires that the Corps of Engineers must take action on an application within 90 days of the date of publication, with exceptions for some listed circumstances. Florida's program has a similar requirement, but the 90 day time clock begins at the time the application is complete. It has been our experience with the Corps of Engineers program that publication of the application is done long before adequate information has been received to make a decision on the application. Therefore, unless the Corps of Engineers is allowed to obtain this information prior to publication, this provision may not be workable, and may result in the Corps of Engineers having to deny applications to meet the 90 day time clock when adequate information has not been submitted. The existing provisions regarding publishing need to be examined to determine if there is enough flexibility to allow the Corps of Engineers to request this needed information prior to publishing. If not, changes should be made that provide for requesting and receiving the needed information prior to publishing. To overcome the fear that the agency may make unreasonable information demands, a provision, such as exists in Florida's program, could be incorporated that allows the applicant to request that publishing, and hence the 90 day clock, begin with the information already submitted.

This section also provides that the 90 day time clock can be waived if the Secretary and the permit applicant determine that additional time is needed to evaluate the application. This is a useful provision that provides needed flexibility to resolve problems. However, this provision should not be viewed as a solution to the problem discussed in the previous paragraph, as it will inevitably lead to charges that the agency is routinely having to request additional time from the applicant, and that they are not meeting their charge to act within 90 days.

SEC. 7 GENERAL PERMIT IMPROVEMENTS

This section includes specific provisions for general permits to be issued to existing State, Tribal, regional or local regulatory programs to avoid duplication if the programs meet certain conditions. This section appears to address the legal concerns over the validity of State Programmatic General Permits (SPGP) that have occurred under existing law and if so, should greatly enhance the usefulness of this approach to reducing regulatory overlap in Florida. The conditions and requirements included in this section to be placed on a state under a State general

permit appear to be reasonable and appropriate. The State of Florida strongly supports this section of the bill.

The bill contains language that restricts general permits to regional and local entities after December 31, 1996, to areas with an approved wetlands and watershed management plan. We would like to stress that this requirement should not apply to state programmatic general permits, which is our understanding of the bill. Developing a statewide wetlands and watershed management plan pursuant to Section 322 would not be possible on a statewide basis.

On page 11, line 5, the following change would seem to more accurately reflect the intent of this paragraph:

"...Atmospheric Administration) to review permit [decisions] applications..."

SEC. 8 COORDINATION AND CLARIFICATION OF PROGRAM CONCERNING AGRICULTURAL ACTIVITIES

In general, the changes in this section appear to make the federal program more consistent with Florida's program. There are several areas in this section that discuss exempt activities that need clarification. Specifically, it is not clear that some of the activities mentioned are related to agriculture, and therefore exactly which activities are exempt is not clear. It may be preferable to separate out those exempt waters or activities that are not intended to be related to agriculture. Specifically these include:

Page 14, 20-22, which relates to artificial reflecting or swimming pools or bodies of water created for aesthetic purposes in uplands,

Page 15, lines 1-5, which relates to mining pits in uplands,

Page 15, lines 6-8, which relates to treatment areas that are not modifications of navigable waters,

Page 15, lines 17-21, which relates to maintenance of groins, riprap, breakwaters, causeways, bridge abutments or approaches, and "transportation structures",and

In addition, we have concerns that some of the activities proposed to be exempt have the potential to cause significant adverse environmental impacts, and should not be included as exemptions. These include:

Page 15, lines 13-16, minor drainage should be deleted from the list.

Page 15, line 22, the construction of farm stock ponds should be exempt only when these ponds are constructed

in uplands. The construction of such ponds by impounding streams and wetlands should specifically not be an exempt activity.

Page 16, line 7, which relates to temporary roads to move mining equipment.

It has been our experience in Florida that these crossings for large draglines associated with phosphate mining, can represent more than a minor impact to wetland resources. In addition, these "temporary" crossings may need to remain in place for several years. In our opinion these activities are better regulated under an individual or general permit that provides conditions for construction, conditions and a timetable for removal of the road, and conditions for restoration of the wetland.

The exemptions provided in this section are not identical to those within Florida's program, however, they should not create an obstacle to assumption or an SPGP as Florida's program may be more protective in these areas.

SEC. 9 MITIGATION BANKS

This section requires that rules be established for the establishment, use, maintenance and oversight of mitigation banks, and provides other direction for the use of mitigation banking in the regulatory process. This approach is very consistent with the directives of mitigation banking passed by the Florida Legislature as part of the Florida Environmental Reorganization Act of 1993 (HB 1751). Rules for the use of mitigation banks in the state regulatory process are being drafted and should be adopted by Jan. 1, 1994. This section of the bill should make the federal and state programs more consistent.

SEC. 12 WETLAND CONSERVATION, MANAGEMENT AND RESTORATION

This section provides funding opportunities for states wishing to develop State Wetland Conservation Plans. In the past, Florida has not been interested in pursuing the development of a State Wetland Conservation Plan, as it did not seem to provide many benefits to a state with an advanced regulatory program and established acquisition programs for environmentally sensitive lands. However, the State Wetland Conservation Plan, as outlined in the bill, may be useful to Florida to enable it to acquire funding for worthwhile activities that it has not previously been able to fund. These include an inventory of wetland resources in the State, identification of sites with wetland restoration potential, and measures to assist in the development of wetland and watershed management plans.

This section provides further opportunities for states to obtain funding to develop wetland and watershed plans.

The plan may be developed or implemented by the state, a regional district, local government or any other public or nonprofit entity which has adequate powers to carry out the outlined responsibilities. Most of the agencies dealing with environmental protection in Florida have come to the realization that advanced watershed planning is "the way to go" to provide meaningful protection to the state's wetlands, recognizing that the wetlands are dependent upon, and an integral part of the surrounding ecosystem. The regulatory system alone cannot achieve a proper watershed approach. The problem in implementing this approach has been adequate funding to develop these watershed plans. There has been an debate over whether or not mitigation credit should be given for the development of these plans. Although most people recognize that a plan by itself does not offset actual impacts, there seemed to be no other way to get these much needed plans developed. Federal funding for development of some of these plans is an excellent solution to this problem and should be strongly supported.

**Testimony before
The U. S. Senate
Subcommittee on Clean Water, Fisheries and Wildlife
Committee on Environment and Public Works
Concerning S 1304**

**by
Kenneth F. Bierly
Wetlands Program Manager
Oregon Division of State Lands
September 15, 1993**

I am Ken Bierly, Manager of the Wetlands Program for the Oregon Division of State Lands. I am here today to represent one western state's view of the proposed legislation (S 1304) concerning wetlands in the considerations to re-authorize the Clean Water Act. First, I will describe Oregon's situation, and then I will make some observations applicable to the federal program.

INTRODUCTION/THE SETTING

Oregon is the tenth largest state in the union, a fact I didn't fully appreciate until it became my responsibility to compile an inventory of the state's wetlands. Oregon has a tremendous diversity of climatic and ecological conditions; the northwest coast receives precipitation in excess of 10 feet per year while the interior basins of the southeast get less than 5 inches per year. While temperatures are generally mild, the alpine regions of the Cascade Range and Blue Mountains may freeze any month of the year; snow accumulations in the Cascade Range frequently exceed 20 feet.

Major river systems dominate the landscape of the Pacific Northwest. The mighty Columbia forms our northern border. Flowing north into the Columbia, the Deschutes and John Day Rivers drain the high lava plains of Central Oregon and the Blue Mountains respectively. The Willamette River and many other smaller streams flow through a broad fertile valley draining the flanks of the Cascades and Coast Range. Similarly, numerous streams drain the western flanks of the Coast Range, flowing into the ocean through estuarine marshes. The Rogue and the Umpqua rivers have cut through the Coast Range, to drain the Southern Cascades and the Klamath Mountains. These streams support salmon, steelhead, and native trout runs matched in few areas for quality, quantity and diversity of fishing. On the Cascade, Blue, Coast, and Klamath Mountains are forests that have supported a major timber industry for the last 150 years.

Although more diversified industry is coming to Oregon, the state has traditionally had a resource-based economy. Agriculture is Oregon's leading economic sector. The state produces a broad variety of crops and other agricultural products. True to the pioneering spirit, Oregon's agricultural economy is based primarily on the family farm. Ranking second to agriculture in economic importance to the state is the timber industry. I need not explain the difficulties the state is going through with conflicts between this economic sector and the protection of the spotted owl and ancient forests.

More than half the surface of the state is managed by the federal government--namely the Bureau of Land Management and the Forest Service. Consequently, Oregonians are very sensitive to federal land management issues. Developing a partnership relationship is critical to effectively managing the state's natural resources.

Since 1980, Oregon's population has grown over 13% from 2.6 million to 3.0 million, far outpacing the increase in the United States over the last decade. The population of Portland alone has increased by 25% over the same period. These trends are expected to continue as more people find the Pacific Northwest a desirable place to live. As Oregon's population continues to grow, so also does the demand for resource use.

According to the most recent estimates, there are some 1.4 million acres of wetlands in Oregon. There has been a loss of nearly 38% of the area of wetlands since the settlement of the state. It is important to recognize that much of this historical loss was a direct result of public policy. The Swamp Lands Act of 1860 allowed settlers to obtain property by draining and converting land to other uses. More than 310,000 acres have been transferred to private ownership under this program. During 1905, companion federal and state legislation formulated a program to drain and convert wetlands in the Klamath Basin to agricultural use. Nearly 300,000 acres of wetlands were drained and thus lost in this basin alone.

Federally funded flood control projects have resulted in dikes that alter regular tidal inundation of the upper reaches of many of Oregon's estuarine wetlands. Flood control and drainage projects throughout the Willamette Valley and along the Columbia River have significantly affected seasonal flooding patterns. The expanse of wet prairie in the Willamette Valley has been so reduced that a number of state and federally listed threatened and endangered plant species are associated with those few remaining habitats.

Despite our unique and diverse heritage, Oregon is like most other states. We have a history of wetland losses due to past state and federal policy. There are competing land uses for our remaining wetland resources. Wetland losses have not been equally distributed throughout the state, but concentrated in the urban and agricultural areas of the Willamette Valley, and in other agricultural centers.

OREGON'S WETLAND PROGRAM

The state legislature recognized the importance of aquatic resources to the people of Oregon relatively early. In 1967, out of concern for protection of spawning areas for our native fishery resources, Oregon initiated state laws to regulate the removal of material from state waters. In 1971, out of concern over the filling of estuarine wetlands in Oregon, the legislature (under the leadership of Governor Tom McCall) adopted laws regulating the placement of fill into Oregon's waters. Oregon's legislation preceded the Clean Water Act requirements established in 1972 and Oregon's program has "grown up" with the 404 program.

This parallel history has given Oregon 20 years of experience in working with the federal wetlands program. Oregon's Legislature has changed the state regulatory program nearly every biennial session. In 1989, the Legislative Assembly created a wetlands program that provides a significantly broader context for wetland permitting.

Oregon's existing program:

1. requires the state to develop a statewide wetland inventory;
2. requires the state to provide the completed wetland inventory to each local government (city and county);
3. requires each local government to notify the state of any proposed land use action affecting inventoried wetlands;
4. allows local governments to develop wetland conservation plans under state guidelines and standards;

5. requires the Division of State Lands to issue permits according to the criteria of those state-approved, locally-adopted wetland conservation plans; and,
6. requires the state to develop a public information program about wetlands.

It has been our experience that moving from a regulatory program alone to a more comprehensive wetland management program with a regulatory element is beginning to significantly enhance public understanding and acceptance of wetland regulation.

THE FEDERAL WETLAND PROGRAM

Currently, the federal government's wetland program is predominantly found in Section 404 of the Clean Water Act. The Food Security Act of 1985 (as amended in the 1990 Farm Bill) now also provides wetland regulation on agricultural lands. These two regulatory programs have led to a variety of complaints by environmental interests, development interests and the regulated public. The complaints range from concerns that the program is too expansive and intrusive on private property rights to the claim that the program does not effectively address those activities that lead to significant wetland losses.

I would like to discuss several aspects of the 404 program, as they are addressed in S 1304. The discussion is based on the experience in Oregon where the state has taken a parallel course to the federal 404 program. There are three topics that I believe are of great significance to the people affected by this legislation:

1. THE PROGRAM NEEDS GOALS AND A CONTEXT FOR THE PERMIT PROGRAM
2. THE PROGRAM MUST BE AS CLEAR AS POSSIBLE TO AFFECTED LANDOWNERS
3. THE PROGRAM IS TOO IMPORTANT TO BE ONLY A FEDERAL PROGRAM

PROGRAM GOALS AND CONTEXT

The 404 program is the only Clean Water Act permitting program that does not have a clearly defined goal. President Bush's Domestic Policy Council deliberated for more than four years on the "no net loss" goal. It is time to quit debating and adopt a policy. Without a policy goal, the permitting process resembles "let's make a deal."

S 1304 provides two specific changes to the 404 program that clarifies the program goals and allows a context for permitting to be developed by local Wetland and Watershed Plans. The explicit policy statement "it is the national policy to achieve, through regulatory and non regulatory strategies involving all levels of government-" "(A) the restoration of wetlands to increase the quality and quantity of the wetlands resource base of the United States; and (B) no overall net loss of the remaining wetlands resource base of the United States" provides clear and explicit guidance for policy implementation. This policy statement is bolstered by placing a definition of wetlands in the Clean Water Act. The policy statement and goal have broad support and are clearly needed to eliminate the confusion over the applicability of the Clean Water Act to wetland resources.

Oregon's experience in aquatic resource regulation was established to protect anadromous fish and estuarine marshes. A review of these two resources is instructive as it relates to the Clean Water Act program. Oregon's initial approach was a regulatory permitting program that responded to proposed alterations. In 1973 Oregon adopted a statewide land use planning program. One of the primary elements of that program was the development of estuary management plans adopted by local governments. The plans have identified 99.4% of Oregon's tidal marsh wetlands as Natural (91.8%) or Conservation (7.6%) management units. These locally adopted plans confine state permitting to be compatible with the local land use designations. The result of the planning efforts along the Oregon coast has been a decline (to nearly nothing) of permit applications for tidal marshland filling. The power of the program has been the local process with strong state guidance. The outcome has shaped local expectations and helped identify and truly protect these wetland resources.

Protection of streams for anadromous fish was approached as a regulatory effort without a planned outcome. With current listings of Columbia River salmon stocks as threatened or endangered and petitions to list as many as 100 additional stocks, it has become clear that the reactive permitting program alone is not working effectively. This last state legislative session Governor Barbara Roberts introduced a "Watershed Health Benchmark Proposal" to look at dysfunctional watersheds, evaluate their ills, plan for their improvement, and protect and restore their health. This proposal was funded during a time of budget shortfalls and was seen as the most effective way to approach complex and intertwined natural resource problems.

The Wetlands and Watershed Management Plans (Section 322) are a powerful tool that will allow local communities to devise programs that will work in their circumstances. This portion of the proposed Act is of central importance for two reasons; first it empowers local communities to identify solutions to their unique problems, second it provides specific guidelines for the necessary information and goals for the planning. The adoption of these plans will provide a context for permitting that is currently absent. This structure reestablishes the rational relationship of a permit being an implementation device for a planning effort. The Wetlands and Watershed Management Plans provision of S 1304 is new and necessary for the program to make sense both for the resource and for the affected people.

CLARIFICATION OF THE PROGRAM TO AGRICULTURE

Oregon is an agricultural state. The state's agricultural and fishery production approaches \$3 billion annually. Farm income has been an increasing portion of the state's economy over the last 10 years. Many Oregon commodities rank very high in the national scope, with 26 commodities ranking fifth or better nationally in production or value of production. Maintenance of a healthy agricultural economy is of great significance to the west and especially to Oregon. No other sector of the country understands the importance of water for their economic livelihood than agriculture. We in the west have a clear and pressing need for clean water.

The agricultural community has been encouraged in the past by public policy to drain wetlands for the public good. Many are confused about the reversal of public policy and concerned about the effect of policies and rumors of policies that could affect their operations. In Oregon this becomes very personal, because of the wide variety of crops produced, there are an exceptional percentage of family farms that depend on agricultural income for their livelihood. Additionally, only a small percentage of Oregon farmers are participants in U. S. Department of Agriculture programs.

There is an interesting discrepancy between image and reality in the wetlands program. Public information materials about wetlands focus on standing water and waterfowl. Most public debate surrounds more subtle environments with seasonal flooding or saturation and values other than waterfowl. I have had a poster that the state developed jointly with the Corps and EPA thrust in my face with the challenge, "Why don't you use photographs of my backyard or pasture?" This conflict in perceptions harkens to the discussions associated with the delineation manual but raises the larger question of providing clear information about the recognition of the functions and values of seasonally flooded or saturated systems. Public information and outreach are crucial functions of government that are addressed in S 1304.

The requirement of S 1304 to recognize "Minimal Effects" determinations made by the Soil Conservation Service in consultation with the U. S. Fish and Wildlife Service (Section 7) is a step in regulatory clarification that can only be applauded. The mandate of Section 8 to "develop consistent criteria and procedures" between the Clean Water Act and the Food Security Act is an overdue effort. You have clearly recognized the agricultural communities' concern about the effect of wetland regulatory program on their operations. These steps along with the specific mandate to coordinate activities with the Secretary of Agriculture (Section 8) and the requirement to assist small landowners and provide public information (Section 4) will help to relieve some of the concerns raised by uncertainty.

The approach taken by S 1304 is to clarify the interaction between two complex programs rather than eliminate one or the other. It is an approach that recognizes the problems and addresses them directly. The clarifications provide continued wetland protection and address recognized problems with the program. While some in the agricultural community wish the Clean Water Act would disappear, many of the producers I speak with clearly see the need for the program "if they could just understand it". The recent brochure developed by the Environmental Protection Agency is a big step in the right direction that can be a part of the information required by Section 4 of S 1304.

SHARING THE RESPONSIBILITY

Different levels of government often have differing capabilities and authorities. Clear recognition must be made of the opportunity to achieve the Clean Water Act objectives of protecting the biological and physical integrity of the nation's waters using the authority and creativity of the states and local communities. It is well understood that many of the nation's water quality "problems" result from land use practices. Land use regulation is a police power reserved to the states. Given a federally defined goal, technical assistance, and modest financing, states and local governments can implement equally efficient and more effective programs. State and local programs can direct land use and regulate water use, powers not vested in the federal government.

The Clean Water Act currently recognizes only two mechanisms for states to interact with the federal wetland program; (1) through water quality certification of federal permits, or, (2) by assuming federal permitting. Michigan is the only state to assume the program since 1977. This is an interesting contrast to the other EPA administered programs (402, RCRA, etc.), where most states have assumed authority. In the nine years since Michigan assumed the program, only two projects have raised significant conflict. In both cases the conflicts have been resolved short of legal resolution. Recently EPA conducted an analysis of barriers to state assumption of 404 permitting.

Oregon created a program to encourage local governments to develop detailed wetland conservation plans that require prevention of net loss of wetlands. The level of interest in local wetland planning surprised many people. We have been working with the Portland District Corps of Engineers to identify opportunities to recognize the results of these planning efforts in the federal permitting program.

The legal structure of Section 404 of the Clean Water Act focuses on federal permitting. This focus has limited options available to the federal government, and this has dampened the enthusiasm of local communities to commit to the effort necessary to develop wetland plans. The most clearly expressed concern from local communities is "What good is our investment in time and effort if the Corps is not going to recognize the results?"

The provisions of S 1304 ensure that the 404 program explicitly recognizes Oregon's wetland planning efforts and authorizes regional permitting for acceptable plans that meet the no net goal. Our experience indicates that wetland planning, among other benefits, allows for creation of corridors and connections between fragmented resources rather than encouraging increased fragmentation as the current permit system does.

We also know through experience that involving local communities and state agencies expands the effective labor pool available to protect wetland resources. Since there is little likelihood that significant additional funding will be added to federal programs, effective use of state and local governments to assist in program implementation as structured in S 1304 is crucial to ensure the nation's wetlands are protected. S 1304 specifically creates opportunities for local communities to integrate wetlands into stormwater management, water quality protection, flood protection and other infrastructure needs.

President Clinton has explicitly adopted as a principle for federal wetlands policy that "the Federal government should expand partnerships with State, Tribal, and local governments, the private sector and individual citizens and approach wetlands protection and restoration in an ecosystem/watershed context." This approach has been adopted by Oregon and is supported by Sections 7 and 322 of S 1304. This recognition of the need for partnerships is meek and should be bolstered. Our experience in Oregon is not promising that the federal government is prepared to shift from a "command and control" permitting approach to a "partnership" program that uses planning approaches to define desired outcomes without clear direction from Congress.

The proposed language of S 1304 goes a long way towards creating a national wetlands management program that respects agricultural practices, creates opportunities for local communities to become involved positively and clearly addresses many of the issues of the current program. I encourage your support.

I would ask only one change that I believe would eliminate a confusion in the printed bill. Section 7 (e) (3) (B) which provides a sunset for state program general permits raises significant questions for states (and local governments) that have regulatory programs that duplicate 404. States like Maryland, Florida, Wisconsin, North Carolina, and New Hampshire, etc. have effectively used state program general permits to minimize regulatory duplication and have occasionally increased wetland protection. To make this regulatory clarification become a forcing function on the state to create a wetlands and watershed management plan statewide or regionally after 1996 becomes rather draconian. I would suggest you delete Section 7 (e) (3) (B). The tie between state program general permits and wetland and watershed management plans confuses two issues, eliminating permitting duplication (State Program General Permit) and creating a context for permitting (Wetlands and Watershed Management Plans).

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TESTIMONY OF ROBERT G. SZABO, THE NATIONAL WETLANDS COALITION

Mr. Chairman, and Members of the Subcommittee, thank you for the opportunity to appear before you today. My name is Robert G. Szabo. I am a member of the Washington, D.C. law firm Van Ness, Feldman and Curtis and appear before you today in my capacity as Counsel to The National Wetlands Coalition. The Chairman of the Coalition, Mr. H. Leighton Steward, who is the Chairman, Chief Executive Officer and President of The Louisiana and Exploration Company, had previous commitments that did not permit his appearance before you today.

The members of our Coalition thank you for focusing the attention of the Subcommittee on this important, but difficult and divisive, issue as part of the Subcommittee's work on the Clean Water Act Reauthorization legislation. We also thank the Chairman and Ranking Minority Member of the full Committee for their leadership in introducing legislation on this important subject.

Our Coalition has endorsed and continues to support the enactment of H.R. 1304, the Comprehensive Wetlands Conservation and Management Act of 1993, which has not been introduced in the Senate. Our testimony before you today will focus on S. 1304, the Wetlands Conservation and Regulatory Improvements Act, which was introduced on July 28th by Senators Baucus and Chafee, and the President's wetlands program recommendations issued on August 24th, entitled "Protecting America's Wetlands: A Fair, Flexible, and Effective Approach."

THE NATIONAL WETLANDS COALITION:

The National Wetlands Coalition was incorporated on September 1, 1989 for the sole purpose of participating constructively in the Federal wetlands regulatory policy debate initiated by the commitment of President Bush to a national goal of "no overall net loss of wetlands" and his establishment of a Task Force of the Domestic Policy Council to develop the necessary policy recommendations to achieve that goal. Our members are a cross-section of the "regulated community" affected by the Federal wetlands regulatory program. A complete list of our members is attached.

The Coalition recognizes the importance and unique contributions of our nation's wetlands resources and agrees that these resources must be both conserved and enhanced. At the same time, we believe that the nation's policy on wetlands protection must reflect other important national goals with respect to the economic health of the nation, infrastructure services and the rights of private landowners.

The Goal of "No Overall Net Loss of Wetlands":

The Coalition supports the immediate national goal of "no overall net loss of wetlands" and the long-term national goal of increasing the quality and quantity of our nation's wetlands resources. We believe that these goals are achievable so long as they are expressed in terms of the functions and values of wetlands and not acreage. We believe that these goals can be achieved through a comprehensive program that includes a Federal regulatory program that is balanced and realistic and earns the support and cooperation of the private sector. A copy of the Statement of Principles that has guided the advocacy of the Coalition since July, 1990 is attached.

THE CURRENT FEDERAL WETLANDS REGULATORY PROGRAM:

The current Federal wetlands regulatory program is founded on section 404 of the Federal Water Pollution Control Act, which was enacted in 1972 (P.L. 92-500). The current program suffers from several fundamental problems.

First, section 404 was never designed to be a comprehensive Federal wetlands regulatory program as is evidenced by at least two facts. section 404 only requires that permits be obtained from the Secretary of the Army for the "discharge of dredged and full material" rather than for the broader set of activities that can adversely affect the nation's wetlands, such as excavation and drainage. Section 404, moreover, does not contain a definition of the term "wetlands" nor does it, in its major operative provisions, even mention "wetlands." Rather than having been authorized specifically by Congress, with attendant policy guidance, the current Federal wetlands regulatory program has been developed primarily through judicial decisions and agency initiatives.

Second, the current Federal wetlands regulatory program is perhaps one of the most extensive Federal regulatory programs that applies primarily to privately owned land. According to estimates of the United States Fish and Wildlife Service, approximately 75% of the nation's remaining one hundred million acres of wetlands in the lower forty-eight states exist on privately owned property. At the recent White House briefing on the President's wetlands policy recommendations, one of

the briefers representing the Department of Agriculture made the statement that 83 million of the remaining 100 to 115 million acres of wetlands in our nation are located on farms. This is in addition to the 53 million acres that are excluded from the program as "prior converted cropland."

Third, too many Federal agencies have roles in the current Federal wetlands regulatory program, including a shared leadership of the program by the United States Army Corps of Engineers and the Environmental Protection Agency. More often than not, these agencies have been at odds with each other over jurisdiction and the application of the program. Congress created this problem and only a act of Congress can completely resolve the problem and avoid future disagreements.

Finally, probably because the details of the current Federal regulatory program have been developed primarily through judicial rulings and agency initiatives in response to those rulings, rather than pursuant to policy guidance from Congress, we believe that the current program is far too cumbersome and inflexible.

Based on these views of the problems with the current regulatory system, we have advocated that Congress debate this issue fully and "re-legislate" a Federal wetlands regulatory program that works for the environment as well as for local communities, the national and local economies and private landowners. While we continue to believe that H.R. 1330 is the best legislative approach to placing the Federal wetlands regulatory program on firm footing, we believe that S. 1304, the Baucus/Chafee bill, moves in the right direction and that the President's proposals move the program even further in the right direction. We encourage the Congress, however, to codify the principles and directions for the Federal wetlands regulatory program, even if Congress agrees with some of the regulatory initiatives of the President's proposed plan.

COMMENTS ON S. 1304 AND THE PRESIDENT'S PROGRAM:

The Coalition would like to comment on several of the key elements of the Federal wetlands regulatory program, including the manner in which these elements are treated by both S. 1304 and the President's plan. Attached are two side-by-side comparisons developed by the Coalition: one comparing key elements of all major proposed wetlands plans; and one comparing key elements of the President's plan and S. 1304. The Coalition suggests that, as Congress decides the direction and guidance for this program, the Congress must weigh and balance the importance of this environmental goal with other important national goals, such as a sustained economic growth, that are also essential to a healthy and vibrant nation.

JURISDICTION OF THE PROGRAM:

DEFINITION OF A WETLAND:

The first element that establishes the jurisdiction of the Federal regulatory program is the definition of a wetland. Of course, the current law does not contain a definition of "Wetland" nor does it provide guidance to the agencies regarding what lands should be covered by the term "Wetland."

In the last six years, three documents have attempted to describe the jurisdictional limits of the program geographically. In 1987, the Corps of Engineers issued guidelines on this matter, which have not been adopted pursuant to a formal rulemaking. In 1989, four agencies issued a manual for delineating wetlands, which also was not adopted pursuant to a rulemaking and which was rejected as being too broad. In 1991, the Bush Administration attempted to revise this delineation manual, but the 1991 manual was rejected as being too narrow. Congress thereafter directed that the Corps of Engineers use the 1987 guidelines until a manual could be adopted pursuant to a rulemaking and it later commissioned the National Academy of Sciences (NAS) to prepare a report on wetlands delineation. Currently, both the EPA and the Corps of Engineers use the 1987 manual. The President's plan would continue the use of the 1987 manual, as currently interpreted, unless the Federal agencies decide that the results of the NAS study justify a rulemaking to modify the guidelines. The Baucus/Chafee bill would continue the use of the 1987 manual as well, but directs that a new manual will be issued after the NAS study is completed.

The Coalition agrees with the general proposition that the judgments made with respect to the wetlands program must be based on the best available science. However, the judgment regarding the extent of the jurisdiction of the program (including the definition of a wetland) is a question of both science and policy. The Congress may very well determine, for overriding policy reasons, that a certain type of wetland that may qualify scientifically as a wetland should not be subject to the Federal wetlands regulatory program.

The Coalition commends that the 1987 guidelines, as currently interpreted, continue to be used to "define" wetlands except that the definition of wetlands adopted by Congress in the 1990 Farm Bill should govern where there are differences between the 1987 manual and that definition. Because the definition of wetlands, as described in the manual adopted for that purpose, is so fundamental to the program and so important to private Landowners, we believe that any changes that might be justified based on the National Academy of Sciences report should be legislated by Congress. What areas are to be regulated is a question that has plagued the program now for many years, and we don't believe that it should be left to agency discretion to decide the breadth of its own jurisdiction. The Coalition agrees with the provisions of the Baucus/Chafee bill that expand section 404 to reference wetlands and to include a definition of wetlands.

The Coalition agrees with both the Baucus/Chafee bill and the President's plan that "prior converted croplands" should be excluded from regulation under the program. The Coalition also agrees with the exclusion of certain man-made wetlands and areas that are created as wetlands incidental to construction, mining and other activities. The Committee may wish to be open to other specific exclusions in this area. In addition, *the Coalition recommends* that the reported legislation clarify that "isolated wetlands" are only subject to the jurisdiction of the program if these wetlands are shown actually to affect interstate commerce, such as through their use as habitat by migratory birds. It would appear that the current EPA interpretation of its jurisdiction extends to any waters that "could affect" in interstate commerce, including use as a habitat for migratory birds.

ACTIVITIES REGULATED:

The second element that establishes the jurisdiction of the program is the definition of regulated activities. The Coalition agrees with the provisions of both S. 1304 and the President's plan that expand the activities to be regulated to include "drainage, excavation, ditching, channelization and mechanized landclearing." The Coalition believes that the appropriate mechanism for achieving this expansion of the program is legislative rather than regulatory. The Coalition also agrees that certain ditching and drainage activities should be excluded from regulation under the program, as is reflected in both S. 1304 and the President's program.

SEQUENCING, CATEGORIZATION AND RESTORATION:

In the view of the Coalition, the application of these three concepts holds the key to transforming the current Federal wetlands regulatory program from a program that antagonizes and alienates the owners of wetlands to a program that will earn their cooperation in a common effort with government to conserve, restore and enhance our nation's wetlands resources. While S. 1304 and the President's plan make strides in this area, we believe that both fall short of making the modifications necessary to resolve fully the current difficulties with the program.

SEQUENCING:

Sequencing is the methodology by which the Corps and the EPA determine whether a section 404 permit should be issued for a proposed activity. This methodology has its roots in the Section 404(b)(1) guidelines that were issued by the EPA on December 24, 1980, but became the methodology used by both agencies with the signing of the February 6, 1990 "Memorandum of Agreement Between the Environmental Protection Agency and the Department of the Army Concerning the Determination of Mitigation under the Clean Water Act Section 404(b)(1) Guidelines." This agreement was neither directed by Congress nor the subject of notice and opportunity for public comment. Prior to this agreement, the Corps judged applications under the traditional "public interest" balancing test contained in its section 404 regulations.

The sequencing methodology requires that the applicant show that there is no "practicable alternative" to the proposed activity that would have less adverse environmental impact. This is known as the *avoidance* step. Only if the applicant can make this showing can the applicant then proceed to the second step—the *minimization* step—where the application is reviewed to determine how environmental impacts can be minimized. Finally, in the *mitigation* step, the applicant must agree to provide compensatory mitigation for any remaining unavoidable environmental impacts of the activity. But mitigation opportunities cannot be considered until the first and second steps—*avoidance* and *minimization*—have been cleared. Under the Corps "public interest test," a comprehensive, integrated review of the permit application was made, including the potential for mitigation.

In practice, the *avoidance* step has become dominant, with applicants often being made to prove a long list of negatives in order to satisfy this first step. Such showings include: no alternative site is available; there are no alternatives to the activity that is being proposed; and so forth. In recent years, field officers of the Corps and the EPA have often been quite rigid in their application of this test and permit applications have often gone into a long holding pattern at this first stage. Obviously, a regulatory program that attempts to *avoid* economic activity on private property inevitably clashes with the rights of private landowners and creates the specter of "takings" by governmental action. This clash between private property rights and the Federal wetlands regulatory system will not cease until some flexibility is introduced into the *sequencing* methodology.

The Baucus/Chafee bill does not address this issue directly. The President's plan includes "guidance" that was recently issued to the field personnel of the Corps and the EPA instructing them that the sequencing test includes flexibility to adjust the rigidity of the test based on the impacts of the proposed activity and the functions and values of the wetland in question. The Coalition appreciates that the President's plan addresses this fundamental issue. However, the Coalition believes that the issue is too important to be resolved through a guidance document that can be withdrawn as easily as it is issued. *The Coalition recommends* that the Congress address this issue, provide policy guidance regarding flexibility in its permit approval methodology and direct that the *sequencing* methodology may only be used in high value wetlands.

CATEGORIZATION:

The Coalition believes very strongly that all wetlands do not provide: equal quantity or quality of wetlands functions and values. Yet, the current Federal regulatory program essentially treats all wetlands equally. Both the Baucus/Chafee bill and the President's plan endorse the concept of categorizing wetlands, but in a manner that we fear will be insufficient to resolve the current difficulties with the Federal program.

We have advocated a national categorization system in which wetlands are placed in at least three categories based on their relative functions and values. The highest valued wetlands would be regulated on a very rigid basis, perhaps through the *sequencing* methodology, while the lower categories of wetlands would be regulated more flexibly. The Baucus/Chafee bill provides for categorization and flexibility in regulatory treatment as part of the proposed state watershed and wetlands management plans. The President's plan makes a similar recommendation, but also specifically rejects the national categorization system as administratively infeasible and too expensive.

The members of the Coalition believe that the concept of state watershed and wetlands management plans provide significant promise and may be very effective tools for making wetlands regulatory programs responsive to regional differences. However, there is no certainty that states will be able to undertake such programs, despite the incentives in both S. 1304 and the President's plan. Also, there is no certainty that the Federal government will approve the plans that are developed by the states. Meanwhile, at least in those areas without such state plans, the section 404 program will not adjust the rigidity of its regulatory program to the levels of functions and values of the wetlands—an idea the merits of which both S. 1304 and the President's plan seem to acknowledge.

The members of our Coalition have trouble accepting the notion that the government cannot map and categorize the nation's one hundred million acres of wetlands—particularly at a time when the government is attempting to "reinvent" itself as a more user-friendly institution—an when the government appears to be ready to undertake a mapping exercise of the biological diversity of the *entire* nation through the National Biological Survey. In fact, we understand that the National Biological Survey is scheduled to commence October 1, 1993, without authorization of Congress and that the House has appropriated \$163.6 million for the Survey and the Senate has appropriated \$159 million. Perhaps the same resources that are undertaking the mapping of biological diversity could, at the same time, categorize and map the nation's wetlands. A report in the September 13th edition of *Inside Energy/with Federal Lands* suggests that an immediate focus of the Survey will be the completion of the national wetlands inventory that is ongoing by the Fish and Wildlife Service.

RESTORATION:

Finally, the Coalition is pleased that both S. 1304 and the President's plan recognize the importance of *restoration* of our nation's wetlands resources as a goal of the

Federal regulatory program. In both coastal and inland wetlands, restoration is a primary need. Restoration holds the key to attaining the long-term goal of enhancing our nation's wetlands resource base and, if applied judiciously, may hold the key to achieving the needed flexibility in the current regulatory program.

The Coalition recommends that Congress take the next step from both S. 1304 and the President's plan and adopt a nationwide categorization system for wetlands. The rigid sequencing methodology might be appropriate for the highest valued wetlands, but a less rigid permitting methodology should be adopted for moderate and lower valued wetlands. In these wetlands a permitting methodology should be established that retains the right to deny a permit, coupled with greater reliance on modifying proposed projects to minimize wetlands impacts and greater use of compensatory mitigation. This formula should achieve the twin goals of conserving and enhancing our nation's wetlands resource base while reducing the tension between private property rights and our nation's environmental goals.

MITIGATION BANKING:

The members of the Coalition are pleased that both S. 1304 and the President's plan recognize the contribution that *mitigation banking* can make to the Federal wetlands regulatory program. This concept, coupled with categorization and a more flexible permitting methodology in appropriate wetlands areas, provides an important instrument for restoring and enhancing wetlands functions and values on a watershed and ecosystem basis.

The Baucus/Chafee legislation, S. 1304, limits mitigation banking to restoration projects. The President's plan allows mitigation banking for restoration, enhancement, creation and, in limited circumstances, preservation of wetlands. The Coalition supports the broader application of the President's plan, although our members fully expect the vast majority of mitigation banking projects to be restoration and enhancement projects. The mining industry, in particular, can create wetlands at reclaimed mine sites. Mining companies have received environmental awards for such activities. These and other creation activities should be recognized and should be able to qualify as mitigation banks.

The members of our Coalition believe that both S. 1304 and the President's plan should be expanded to allow mitigation banks to be established *contemporaneously* with the activity for which they will provide compensatory mitigation rather than only *in advance* of such activities. We recognize that some have concerns that compensatory mitigation has not always been provided, even when promised or ordered by the Corps of Engineers. However, a better answer to this problem, we believe, is through inspection and enforcement, rather than rigidly requiring that all mitigation banks be developed in advance of the activities for which they will provide compensatory mitigation.

Unless the government intends to finance all banks, which we would hope is not the case, the incentive for a private sector bank to be established may not always exist "in advance." However, when a project is contemplated and undertaken, the incentive will be present and a bank can be developed with appropriate terms and conditions to ensure that the bank provides the required compensatory mitigation.

ADMINISTRATION OF THE PROGRAM:

The members of the Coalition are pleased that both S. 1304 and the President's plan address a number of problems with the administration of the current program.

AGENCY COORDINATION:

The members of the Coalition agree with the increased coordination of the activities of the various agencies contained in both S. 1304 and the President's plan. The Coalition appreciates the provision of S. 1304 that places a time limit on the exercise of the Section 404(c) veto power by the Environmental Protection Agency. However, *the Coalition recommends* that the Congress take one further step and repeal the Section 404(c) veto power of the Environmental Protection Agency.

The Environmental Protection Agency has a strong voice in the program through the Section 404(b)(1) guidelines. Provisions of the President's program and S. 1304 clarify the power of the Environmental Protection Agency with respect to various aspects of the program. The Section 404(g) elevation provisions, which allow the EPA, the Fish and Wildlife Service and the National Marine Fisheries Service to elevate policy decisions and permit decisions to their headquarters offices, exert significant "veto" type pressure on the Corps in its implementation of the section 404 program. The entire emphasis of the President's program and S. 1304 is to provide more guidance to applicants on the "front end" of the regulatory process in order to expedite the process and avoid the regulatory morass in which so many have found

themselves. In light of these developments and the evolution of the section 404 program over the last twenty years, the Coalition suggests that the Section 404(c) veto power is no longer necessary to ensure the voice of the EPA in the section 404 regulatory process. In line with the effort to "reinvent" and streamline government, the Coalition suggests that this unique mechanism be removed from the statute.

ADMINISTRATIVE APPEAL PROCESS:

The members of the Coalition appreciate the fact that both S. 1304 and the President's plan provide for an administrative appeal process for the section 404 program.

The Coalition prefers the President's plan for two reasons. First, the President's plan provides more grounds for appeal, including the accuracy of the determination that the area in question is a jurisdictional wetland and the imposition of administrative penalties. Second, the President's plan restricts the right of appeal to the permit applicant, but allows third parties to participate in the appeal when the permit applicant appeals the denial of a permit.

The Coalition believes that the President's approach of denying the right of third parties to initiate appeals in most instances is appropriate because a variety of Federal agencies participate in the permitting process to advocate the interests of the public.

The Coalition commends that the right of appeal in the President's plan be expanded further to include the appeal of permit conditions. While relatively few permits are completely denied, often permit applicants obtain permits that contain terms and conditions that render the permits useless. The Coalition believes that the permit applicant should have access to the administrative appeal process for terms and conditions, but would further recommend that third parties be allowed to participate in such appeals as they may participate in appeals of permit denials.

DEADLINES FOR ACTION ON PERMIT APPLICATION:

The members of the Coalition appreciate that both S. 1304 and the President's plan address the issue of deadlines for action on permit applications. Unfortunately, neither the bill nor the plan provide a mechanism that will enforce the time deadlines. *The Coalition recommends* that the Congress provide that any permit application that is not acted upon within the time deadlines shall be construed to have been issued with the terms and conditions contained in the application. The Corps could be given the authority to certify that one of the grounds contained in S. 1304 for failing to act has occurred, but the Corps should be required in that instance to establish a new and reasonable deadline for action.

GENERAL PERMITS:

The Coalition appreciates that both S. 1304 and the President's plan recognized the importance of general permits to the implementation of the section 404 program and have, if anything, expanded their use. The Coalition is somewhat concerned, however, with that provision of S. 1304 which may be read to add to all current general permits requirements to mitigate adverse impacts. General permits, by definition, have only "minimal" impacts, both individually and cumulatively, and the Coalition is concerned that mandating new mitigation conditions is unnecessary and may reduce the usefulness of general permits.

MAPPING AND NOTICE:

One of the difficulties of the current program is that no maps exist indicating which lands are subject to Federal regulation and that no notice is provided at county and parish courthouses where prospective land purchasers or lenders can be notified of the Federal status of certain lands. While the section 404 program resembles a Federal zoning program, it does not contain the mapping and notice protection of a typical zoning program. Neither S. 1304 nor the President's plan address this program deficiency. *The Coalition recommends* that Congress direct the mapping of Federal wetlands and the posting of such maps in county and parish courthouses to notify the public of the potential Federal status of county and parish lands.

ROLE OF THE STATES AND LOCAL GOVERNMENTS:

The members of the Coalition are pleased that both S. 1304 and the President's plan attempt to harmonize and coordinate local, state and Federal actions on wetlands through the traditional state assumption approach, the use of programmatic general permits and the innovative state wetlands and watershed management plans. These approaches appear to offer great promise for better and more efficient

environmental regulation *if* states and localities will determine to take advantage of these opportunities and *if* the Federal government is flexible in its plan approval process.

The Coalition recommends that Congress provide, with respect to each of these approaches, that the Corps and the EPA do not retain the ability to review individual permit decisions within the limits of any such approved plans. Compliance with an approved state program to which the section 404 program has been delegated, compliance with an approved state watershed and wetlands management plan, and compliance with a programmatic general permit should be deemed to be compliance with the section 404 permitting program. The members of the Coalition believe that the proper role of the Federal agencies is to approve such plans, then to monitor the progress of such plans and to revoke the plans, after notice and hearing opportunities, if they are not working properly.

The Coalition also recommends that the rules concerning the establishment and approval of state watershed and wetlands management plans, in particular, be carefully constructed to avoid undue burdens for interstate projects. A proliferation of watershed management plans may pose significant difficulties for interstate pipeline and electricity transmission projects, particularly where the "host" area does not benefit directly from the project, although the project may be very important to either the nation or a region. Will the general permits of the section 404 program apply in such approved plans? Will such plans be approved if they contain provisions aimed at denying permits to certain types of interstate activities?

Finally, while the Coalition recognizes the interest in encouraging states to implement state watershed and wetlands management plans, the provision in S. 1304 that withdraws programmatic general permits if state watershed and wetlands management plans are not in place on December 31, 1996, may be counter productive. In a progressive and effective local wetlands management plan has received a programmatic general permit, but the watershed area in which the local plan is located has not developed an approved watershed management plan in a timely fashion, repealing the programmatic general permit may advance neither environmental interests nor local governmental and economic interests. Moreover, those involved in developing the local plan may be completely powerless to effect the development of an approved watershed management plan covering the larger area.

PRIVATE PROPERTY RIGHTS:

One of the major reasons that the Congress is now preparing to address the section 404 program is that thousands of landowners around the nation have complained to their elected representatives that the Federal wetlands regulatory program is denying them the use and value of their property. Local tax bases have suffered as landowners have sought and obtained lower tax assessments on their "wetland" properties.

Many of the provisions of S. 1304 and the President's plan, if implemented properly, should reduce the conflict between private landowners and the Federal program. The second principle of the President's plan states that the section 404 program must be:

"administered in a manner that avoids unnecessary impacts upon private property and the regulated public, and minimizes those effects that cannot be avoided. . . ."

A later provision of the President's plan states that:

"The Administration strongly supports private property rights. . . . However, in rare instances the public interest in conserving wetlands may substantially interfere with the rights of landowners. In such instances, Federal action will be based on the proposition that restrictions on the actions of the property owners in question are called for in order to protect the property rights, safety, environmental or economic interests of other individuals or the community at large. In those situations where the necessary restrictions on use amount to a taking of the property, the owner will, of course, be entitled to compensation."

Unfortunately, the Administration plan is silent on exactly how such a citizen will obtain compensation, other than bringing an action against the Federal government in the Court of Federal Claims for compensation pursuant to the Fifth Amendment to the United States Constitution.

The members of the Coalition believe that the harsh reality is that "takings" in commonly understood terms may not be so rare, while "takings" in the judicial sense may be rare indeed. If the only mechanism for obtaining compensation from the government for the lost use of private property under the section 404 program is to sue the government, few Americans will be able to obtain relief. Suits against the

Federal government alleging a "taking" generally require the investment of years and hundreds of thousands of dollars, which can be repaid by the government if the plaintiff is successful. Only the wealthiest individual Americans and successful corporations can afford such suits.

The Coalition recommends that Congress direct legislatively that the section 404 program be implemented in such a fashion as to the adverse impact on the use and value of private property. The Corps and the EPA should be required to monitor the adverse impacts on private property and local tax bases and to report to Congress every two years on this subject. *The Coalition recommends* further that the Congress should develop a non-judicial mechanism by which at least certain classes of wetlands owners can obtain compensation in appropriate cases without resort to court. Earlier this year, Secretary of the Interior Babbitt suggested to the House Merchant Marine and Fisheries Committee in oral testimony that the Land and Water Conservation Fund might be used for this purpose.

INTERGOVERNMENTAL WETLANDS COORDINATING COMMITTEE:

S. 1304 calls for the establishment of an "intergovernmental wetlands coordinating committee" to coordinate Federal, state and local government wetlands policies. The Coalition notices that the bill makes no provision for membership on the coordinating committee by representatives of wetlands owners. The Coalition believes that since a vast majority of wetlands are in private ownership, and such ownership is a complicating factor in creating a workable Federal wetlands policy, any coordinating committee should include the regulated community, including representatives of private landowners.

AGRICULTURE:

The Coalition is pleased with the progress that both S. 1304 and the President's plan make with respect to the equitable and efficient treatment of agriculture, particularly where farming and agricultural activities are involved. While several agricultural interests are represented in the Coalition, we understand that members of the agriculture community will be testifying before the Subcommittee. Therefore, we will not presume to speak for agriculture on these matters.

ALASKA:

The Coalition is disappointed that neither S. 1304 nor the President's plan address specifically the very special problem that Alaska is experiencing under the section 404 program. We are pleased that the Administration has promised to address this issue and encourage the Members of the Subcommittee to include in the Clean Water Act Reauthorization legislation specific provisions that address the very legitimate concerns of Alaska. We understand that Senator Stevens will be testifying before the Subcommittee on these matters. We support the Alaska delegation and our Alaska members in their efforts to obtain a workable and effective program for their unique circumstances.

CONCLUSION:

Mr. Chairman, thank you again for giving the Coalition an opportunity to testify today and for addressing the Federal wetlands regulatory program. We look forward to playing a constructive role in the effort to achieve a balanced and effective Federal wetlands regulatory program that works for the environment, the nation's economy and private landowners.

Thank you.

STATEMENT OF PRINCIPLES

The National Wetlands Coalition is a geographically and economically diverse group of public and private sector entities that have joined together to participate in the efforts of the Congress and the Administration to establish a comprehensive policy for effective conservation and management of the Nation's wetlands. The National Wetlands Coalition will support the adoption of the specific programs and policies that advance the objectives of wetlands conservation, consistent with the following principles:

1. The Congress of the United States and the President should establish a comprehensive Federal Program for managing the Nation's Wetlands Resource Base in a manner that effectively and sensibly accommodates the competing, legitimate demands for conservation and use of wetlands resources.

2. Given the number and diversity of people affected, and the economic and environmental importance of the Wetlands Resource Base, a comprehensive Federal Wetlands Policy should be the product of a National consensus-building process.
3. "No overall net loss of wetlands values" is an appropriate goal for achieving the effective conservation of significant wetlands values and functions. This goal should be pursued by implementation of a variety of the regulatory and nonregulatory programs designed to: conserve the highest value wetlands; ensure that development activities in wetlands conserve wetlands values and functions to the maximum extent practicable; eliminate or streamline procedures for use of wetlands of marginal resource value; and, provide incentives for private wetlands conservation efforts.
4. Protection of the Nation's high-value wetlands, and restoration of wetlands generally, will require aggressive nonregulatory programs including public acquisition and incentives for set-asides and for restoration activities. Federal funding required for such programs should be from the broadest sources possible with no single industry required to bear a disproportionate share of the cost.
5. Substantial reform of the section 404 permitting process is necessary to consolidate agency responsibility, to expedite routine permitting, to increase flexibility in the program, and to provide greater predictability in all cases. Critical to the establishment of a sensible permitting process is the recognition that all wetlands are not of equal value and that the level of regulation and mitigation imposed should vary depending upon functions and values of affected wetlands, degree and duration of impact, and the surrounding land use.

The National Wetlands Coalition is a geographically and economically diverse group of public and private sector entities that have joined together to participate in the efforts of the Congress and the Bush Administration to establish a comprehensive policy for effective conservation and management of the Nation's wetlands. The National Wetlands Coalition will support the adoption of specific programs and policies that advance the objectives of wetlands conservation, consistent with the following principles:

1. **THE CONGRESS OF THE UNITED STATES AND THE PRESIDENT SHOULD ESTABLISH A COMPREHENSIVE FEDERAL PROGRAM FOR MANAGING THE NATION'S WETLANDS RESOURCE BASE IN A MANNER THAT EFFECTIVELY AND SENSIBLY ACCOMMODATES THE COMPETING, LEGITIMATE DEMANDS FOR CONSERVATION AND USE OF WETLANDS RESOURCES.**
 - The National Wetlands Coalition recognizes that the Nation's wetlands are a dwindling and valuable natural resource that has been and should continue to be, host to a wide variety of environmental values and economic activity.
 - At the national, state and local levels, attempts have been made to devise regulatory and nonregulatory programs aimed at addressing specific wetlands resource management issues. The result is an inconsistent, often duplicative array of federal and state programs that do not effectively serve the purposes of better conservation and management. To ensure uniformity and minimize redundancy, the federal government should take the lead in defining a national policy for accommodating the competing needs for wetlands conservation and use, and for providing economic incentives for private wetlands conservation efforts.
 - In devising federal policies, programs and standards for wetlands conservation, policymakers should not view wetlands as an isolated resource. While a comprehensive wetlands policy by definition will give special focus to wetlands, conservation issues, federal policies governing the use of wetlands resources should also account for values and functions of neighboring upland and open water resources and the social benefits of man-made systems necessary to support and protect the human population.
2. **GIVEN THE NUMBER AND DIVERSITY OF PEOPLE AFFECTED, AND THE ECONOMIC AND ENVIRONMENTAL IMPORTANCE OF THE WETLANDS RESOURCE BASE, A COMPREHENSIVE FEDERAL WETLANDS POLICY SHOULD BE THE PRODUCT OF A NATIONAL CONSENSUS-BUILDING PROCESS.**
 - Most of the Nation's population lives and works in coastal areas or along rivers and other streams. As a consequence, policies dictating the management of this resource directly affect a substantial portion of the Nation.
 - Over seventy percent (70%) of the Nation's wetlands are privately owned. Consequently, it is unreasonable to expect a national wetlands policy to be effective unless it is the product of a national consensus.

- In order to accomplish this very broad goals of wetlands conservation, substantial resources (both public and private) will be required. In the absence of a nationwide consensus on a national wetlands policy, these programs will not receive the high national priority required to accomplish the national goal.
 - A number of administrative authorities are currently in place that enable the Army Corps of Engineers, the Environmental Protection Agency (EPA), and the Fish and Wildlife Service, to regulate activities in wetlands. However, the actions under these authorities have not in the past been well-coordinated and the public has not had an adequate opportunity to evaluate specific policies and procedures that may be used to accomplish the national wetlands conservation and management goals. To ensure adequate public participation in the development of federal policies and programs, it is essential that all administrative actions establishing new wetlands policy be subject to the Administrative Procedure Act notice and comment process.
 - The results of the interagency Task Force regional hearings should be the starting point for the development of a comprehensive wetlands conservation and management policy. In addition, the Congress should undertake a comprehensive review of the section 404 permitting process to evaluate the effectiveness of that program in meeting the goals of effective wetlands conservation management and use. Thereafter, if appropriate, the Congress should enact legislation establishing the statutory parameters of a national wetlands policy that takes into consideration the recommendations of the Task Force and the findings of the Congressional review of the permitting process.
3. "NO OVERALL NET LOSS OF WETLANDS VALUES" IS AN APPROPRIATE GOAL FOR ACHIEVING THE EFFECTIVE CONSERVATION OF SIGNIFICANT WETLANDS VALUES AND FUNCTIONS. THIS GOAL SHOULD BE PURSUED BY IMPLEMENTATION OF A VARIETY OF REGULATORY AND NONREGULATORY PROGRAMS DESIGNED TO: CONSERVE THE HIGHEST VALUE WETLANDS; ENSURE THAT DEVELOPMENT ACTIVITIES IN WETLANDS CONSERVE WETLANDS VALUES AND FUNCTIONS TO THE MAXIMUM EXTENT PRACTICABLE; ELIMINATE OR STREAMLINE PROCEDURES FOR USE OF WETLANDS OF MARGINAL RESOURCE VALUE; AND, PROVIDE INCENTIVES FOR PRIVATE WETLANDS CONSERVATION EFFORTS.
- National wetlands policy should be forged around the following critical assumptions, which derive from the recognition that the functional values associated with different kinds of wetlands may vary substantially:
 - i. There are some areas of wetlands that possess unique, fragile and scarce environmental values that are so exceptional and significant that preservation of these lands in their natural condition will be desired by federal, state and local governments and by the public. In those cases, the land should be purchased or set aside rather than preserved solely through regulation. Those wetlands should be identified in an open public process. Once so identified these lands should be promptly acquired and set aside, with fair compensation to the landowner. If acquisition or set aside is not tenable within a reasonable period of time, these lands should be made available for other uses, consistent with appropriate environmental safeguards.
 - ii. Much of the Nation's wetlands resource can sustain multiple use, subject to appropriate environmental regulation. Such areas may include certain publicly owned wetlands not managed under protected status. Even where significant environmental values are present, multiple use may be appropriate where such uses provide social and economic benefit and where environmentally sound management techniques are available that minimize or adequately compensate for values lost.
 - iii. The stringency of environmental regulation should vary depending upon such factors as the functional values affected, the character of the intrusion (temporary or permanent), and the reliability of conservation technologies. Emphasis should be placed upon protection of values or compensation for functions lost. Requirements for compensation should vary in relation to the duration of impact on environmental values, the extent of loss of functional values, the relative abundance of remaining wetland values in the affected area, and the cost-effectiveness of compensatory mitigation.
 - iv. Areas that fall within the technical scientific definition of wetlands, but which offer not appreciable functional resource values, should be exempt from federal permitting regulation. Requirements for compensatory mitigation may not always be appropriate in areas where wetlands are in abundance and losses

are minimal. Where wetlands values are limited or marginal, streamlined procedures should apply.

- v. Some areas of degraded wetlands may be made available for set aside voluntarily by landowners or developers as mitigation for other activities, if such areas have potential as sites for restoration or enhancement.
 - vi. In addition to wetlands-related environmental considerations, other critical factors to be considered in effectively managing wetlands resources are: social benefits to be derived from multiple use; impact of wetlands planning decision on other environmental values; the feasibility of mitigation techniques that minimize intrusion resulting from specific uses; the availability and feasibility of compensatory mitigation; and the relative benefits and costs of eliminating economic activities in privately owned wetlands.
 - The phrase "no net loss" of wetlands has become a watchword for the current wetlands policy debate. However, the phrase as yet has no workable definition. If the concept is to have a constructive place in the national policy debate, it must be defined as an overall goal, the purpose of which is to conserve existing wetlands values, to restore and enhance degraded wetlands areas, and to develop reliable techniques for creating wetlands values.
 - The "no net loss" of wetlands goal should not be implemented as an arithmetic standard to be applied through regulatory programs and measured by comparing acreage losses and gains on a permit-by-permit basis. Success in accomplishing the "no net loss" goal should be measured by evaluating the values and functions preserved and gained through regulatory and nonregulatory programs that minimize or compensate for the adverse effects of development activities. Also critical to success is the development of programs that add to the wetlands resource base through acquisition and improved wetlands restoration, enhancement and creation techniques. The National Wetlands Coalition supports the pursuit of this goal.
- 4. PROTECTION OF THE NATION'S HIGH-VALUE WETLANDS, AND RESTORATION OF WETLANDS GENERALLY, WILL REQUIRE AGGRESSIVE NONREGULATORY PROGRAMS INCLUDING PUBLIC ACQUISITION AND INCENTIVES FOR SET-ASIDES AND FOR RESTORATION ACTIVITIES. FEDERAL FUNDING REQUIRED FOR SUCH PROGRAMS SHOULD BE FROM THE BROADEST SOURCES POSSIBLE WITH NO SINGLE INDUSTRY REQUIRED TO BEAR A DISPROPORTIONATE SHARE OF THE COST.**
- In areas where no development is to be permitted, land must be acquired and owners fairly compensated. A trust fund may be necessary to make this acquisition a national priority. Legislative action may also be necessary to facilitate land or resource exchanges as a method of compensation.
 - As a supplement to programs for acquiring highest value wetlands, tax incentives for easements, donations or other set-aside programs should be increased.
 - The management of governmentally owned resources should be evaluated. In some instances, increased levels of protection of governmentally owned lands and additional investment in resource enhancement may be appropriate. In the case of governmentally owned lands that can sustain multiple use, appropriate regulatory programs should be established that take into account environmental values and functions as well as social factors including energy security needs and economically effective resource management.
 - Subsidy programs that encourage destruction of wetlands should be reconsidered or eliminated, as appropriate.
 - Research and development efforts should be aggressively undertaken and funds, both public and private, should be made available for planning, restoration projects, and related wetlands conservation activities.
 - In recognition of the fact that all Americans benefit from the developmental activities taking place in the Nation's wetlands, federal funding required for programs implemented as a result of a national wetlands policy or new legislation should come from the broadest sources possible. No distinct group of Americans or single industry should bear a disproportionate share of the cost.
- 5. SUBSTANTIAL REFORM OF THE SECTION 404 PERMITTING PROCESS IS NECESSARY TO CONSOLIDATE AGENCY RESPONSIBILITY, TO EXPEDITE ROUTINE PERMITTING, TO INCREASE FLEXIBILITY IN THE PROGRAM, AND TO PROVIDE GREATER PREDICTABILITY IN ALL CASES. CRITICAL TO THE ESTABLISHMENT OF A SENSIBLE PERMITTING PROCESS IS THE RECOGNITION THAT ALL WETLANDS ARE NOT OF EQUAL VALUE AND THAT THE LEVEL OF REGULATION AND MITIGATION IMPOSED SHOULD VARY DEPENDING UPON FUNCTIONS AND VALUES OF**

AFFECTED WETLANDS, DEGREE AND DURATION OF IMPACT, AND THE SURROUNDING LAND USE.

- In the short term, specific regulatory reforms should be implemented to ensure a more effective, equitable and predictable regulatory system. These reforms should be developed in accordance with the following guidelines:
 - i. In any case in which compensatory mitigation is appropriate, compensatory mitigation requirements should be considered early in the section 404 permitting process. This is particularly important where compensatory mitigation is required by consulting agencies or nonfederal agencies.
 - ii. Mitigation that is demonstrated to be effective should be relevant to all phases of alternatives comparisons.
 - iii. The leadership role of the United States Army Corps of Engineers in the section 404 permitting process should be clarified and the role of other federal agencies in the process should be consolidated. In particular, the EPA's role in specific permit decisions should be limited. To the extent that the EPA should continue to play a role in specific permitting decisions, the EPA should be required to participate in the early stages of any standard permit process as a precondition to the exercise of the section 404(c) veto. If the EPA's veto power is retained, the basis for exercising the veto should be specifically identified.
 - iv. The permit process should give reasonable deference to the applicant in defining a project's purpose. This is particularly important for public works projects undertaken by state and local governments. In the event such a proposed project does not meet section 404 requirements, the federal permitting agency should be required to work with the applicant to identify a permissible project alternative that substantially accomplishes the applicant's project purpose and which can receive permit approval as part of the pending permit process.
 - v. Where regulatory mitigation is required, such requirements should be flexible enough to encourage private sector investment and innovation in wetlands enhancement, restoration and creation.
 - vi. The "public interest" standard should be statutorily integrated into the section 404 permitting process.
 - vii. It may be appropriate for certain activities that are currently nonjurisdictional to be integrated into a new federal wetlands regulatory program.
 - viii. Nationwide, permits should be maintained; certain regulatory nationwide permits should be statutorily affirmed.
 - ix. Federal mitigation policy must be committed to the conservation, enhancement, restoration and creation of wetlands on an ecosystem basis. A federally supported mitigation banking program should be established for states or, where appropriate, localities, for the purpose of coordinating mitigation activities in wetlands ecosystems.
- Over the longer term, a regulatory program should be developed that assigns different levels of regulatory requirements commensurate with the character of the wetlands values affected by proposed activity. As a result, the cornerstone of regulatory revisions to the section 404 process should be a nationwide effort that will evaluate and categorize wetlands according to their functions and values.
- The characterization of wetlands for regulatory purposes should take into consideration economic, social, and environmental considerations, as well as the established surrounding land use.
- To avoid transfer of an essentially local land use function to the federal government, states should play a major role in defining this scheme for designated wetlands values, functions and uses.
- In general, wetlands that are incidentally created by development activity are unlikely to possess high ecological values and should be treated with maximum regulatory flexibility.
- The consequence of this characterization for purposes of managing uses should be as follows:
 - i. Some areas will be determined by legislative action to be appropriate for acquisition. These areas may include for example, those that contain very high values that would be destroyed if permanent development activity were permitted to occur therein. Funding should be available so that landowners will be fairly and timely compensated for the taking of such wetlands.
 - ii. Other wetlands areas will be identified as environmentally sensitive, although capable of sustaining certain kinds of development activities. These should be

- subject to more rigorous environmental requirements, including the development of higher standards of industry practices where appropriate.
- iii. Some areas will be identified as having only marginal resource values. Regulation of activities in such areas should be streamlined and, if possible, eliminated. Areas with minimal wetlands characteristics, but that provide marginal environmental values, should be exempt from regulation.

THE NATIONAL WETLANDS COALITION

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September 14, 1993

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HIGHLIGHTS OF DIFFERENCES BETWEEN
THE PRESIDENT'S WETLANDS PLAN AND
S. 1304, THE BAUCUS-CHAFEE BILL

THE ADMINISTRATION PLAN	S. 1304, BAUCUS-CHAFEE BILL
PERMIT PROCESS	
<p>The Corps is directed to promulgate a public rulemaking establishing an administrative process for appeals of determinations of Corps jurisdiction, permit denials, and administrative penalties.</p> <p>Third parties may appeal only when a permit applicant appeals the denial of a permit.</p>	<p>Directs the Corps to establish by regulation an administrative process for appealing only permit determinations. No appeal of determinations of Corps jurisdiction or administrative penalties.</p> <p>Allows third parties to appeal permit approvals if the third parties have participated in the public comment process.</p>
MITIGATION BANKING	
<p>Regulatory guidance, issued by the Corps and EPA simultaneously with the release of the Plan, clarifies the use of mitigation banking for developing compensatory mitigation conditions in Section 404 permits. The guidance defines mitigation banking to include restoration, enhancement, preservation and creation.</p> <p>Recommends that Congress endorse the appropriate use of mitigation banking as a compensatory mitigation option and that the State Revolving Fund be used by states to capitalize mitigation banks.</p> <p>Contains no provision concerning payment of "fee charges" for participation in a mitigation bank.</p>	<p>Requires the Corps and EPA to jointly issue rules for the establishment, use, maintenance and oversight of mitigation banks. Limits mitigation banking to restoration only.</p> <p>Allows mitigation banks to be capitalized from the State Revolving Fund only if they are part of an approved state or local wetlands and watershed management plan.</p> <p>Requires the payment of "fee charges" for participation in a mitigation bank based on the "full costs of replacing lost wetlands functions and acreage."</p>

S. 1304, BAUCUS-CHAFEE BILL.	
THE ADMINISTRATION PLAN	AGRICULTURE
<p>Contains no provision adding haying and grazing to the exemption for normal farming or ranching activities.</p> <p>The SCS, the Corps, EPA and FWS are to enter into a Memorandum of Agreement within 120 days of the date of release of the Plan to develop procedures to provide that SCS wetland delineations will represent the "final" government position on Swampbuster and CWA jurisdiction on agricultural lands. The agencies are also to use the same procedures for delineating wetlands.</p> <p>Directs that a nationwide General Permit be issued for discharges associated with "minimal effects" and "frequently cropped with mitigation" conversions determined by SCS and FWS to qualify for exemption from Swampbuster provisions. Provides that an "individual review" by the Corps and EPA will "generally" not be required.</p>	<p>Adds haying and grazing to the exemption for normal farming and ranching activities.</p> <p>Provides that SCS, the Corps, EPA, and FWS must enter into agreements within 180 days of enactment to "develop consistent criteria and procedures for making technical determinations" under the Swampbuster program and the Section 404 program, including delineation of wetlands and prior converted croplands. Contains no specific directive making SCS the lead agency for delineations on agricultural lands.</p> <p>Allows a general permit to be issued for activities determined by SCS and FWS to be exempted under Swampbuster, but requires that an opportunity be provided for the Corps and EPA to "review determinations" by SCS.</p>
DELINEATION	DELINEATION
<p>Contains no specific provision calling for authorization of funds for small landowner assistance.</p>	<p>Authorizes the Corps and EPA to spend up to a combined \$5 million annually to assist "private landowners who lack the financial capacity" to delineate their lands or to assist such landowners in developing restoration or management plans for their lands.</p>

THE ADMINISTRATION PLAN	S. 1304, BAUCUS-CHAFEE BILL
<p>GENERAL PERMITS</p> <p>The Corps (only) is to issue guidance specifying when state, tribal, regional and local programs can effectively regulate Section 404 activities through issuance of Programmatic General Permits (PGPs). PGPs allow Federal general permits to be issued for an existing state, tribal, regional or local regulatory program whereby compliance with such a program becomes compliance with the Federal program. The Plan also calls for Congress to amend the CWA to explicitly provide for issuance of PGPs.</p> <p>Contains no "hammer" provision.</p>	<p>Programmatic General Permits may be issued subject to review by the Corps, EPA, FWS, and NOAA.</p> <p>Contains a "hammer" provision, under which PGPs may not remain in effect after 1996 unless (1) the state, tribal, regional or local government has developed and is implementing a wetland or watershed management plan, and (2) the responsible governmental unit has the legal authority and scientific capacity to discharge the program.</p>
<p>CLASSIFICATION</p> <p>EPA and the Corps issued guidance to their field staff in conjunction with the release of the Plan to clarify that small projects with minor environmental impact are subject to less rigorous permit review than larger projects with more substantial impact.</p> <p>Directs the agencies to expedite development of a new approach for wetland functional assessment known as Hydrogeomorphic Classification System. The system will assist agencies in assessing the relative severity of environmental impact of proposed discharges in order to determine the appropriate degree of flexibility in permitting referenced above.</p>	<p>No similar provision.</p> <p>No similar provision.</p>

THE ADMINISTRATION PLAN	S. 1304, BAUCUS-CHAFEE BILL
<p>ALASKA</p> <p>Citing "significant environmental consequences" that would attend the so-called "one percent rule," the Plan withdraws the proposed rule. The rule would have exempted wetlands in Alaska from mitigation requirements until one percent of Alaska's wetlands had been converted. The Plan states that there is enough flexibility in the existing Section 404 program to respond administratively to Alaska's unique concerns.</p> <p>The Plan directs EPA and the Corps to meet with the Federal resource agencies, Alaska and local government agencies, representatives of native villages, and industry and environmental groups in Alaska to consider "environmentally appropriate means to assure regulatory flexibility and the feasibility of alternative permitting procedures in Alaska."</p>	<p>No similar provision.</p> <p>No similar provision.</p>
<p>STATE ROLE</p> <p>Calls for Congress to authorize partial assumption of the Section 404 program by States and Tribes as an interim step toward full assumption.</p>	<p>No similar provision.</p>

September 9, 1993

**SIDE-BY-SIDE COMPARISON OF CURRENT WETLANDS LAW;
THE ADMINISTRATION'S PLAN; HR 1330 -- HAYES-RIDGE BILL; HR 350 -- EDWARDS BILL;
S. 1304 -- BAUCUS-CHAFEE BILL; ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL;
AND LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT**

CURRENT LAW	ADMINISTRATION PLAN	HR 1330: HAYES BILL	HR 360: EDWARDS BILL; AND S. 1186: BOXER BILL	S. 1304: BAUCUS-CHAFEE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT AND COMMISSION REPORT (Gov. Bill Clinton of Arkansas, Chairman)
<p>Two different agencies rule on permit decisions. The Corps of Engineers (Coastal) can issue or deny permits. The Fish and Wildlife Service (FWS) can issue or deny permits. The Corps of Engineers can veto permit proceedings. The two agencies often have different interpretations of the Section 404 rules.</p> <p>U.S. Fish & Wildlife Service (FWS) and other Federal agencies may submit written comments on permit applications, but have no authority to deny permits.</p>	<p>Emphasize ultimate role of a single agency decisionmaker, while providing for coordinated efforts among the relevant agencies. The Corps will function in a leadership capacity as a "manager", with the other Federal resource agencies performing their advisory responsibilities. Supports continued use of 1982-404(g) MOAs concerning "delegation," designate the SCS as the lead agency for wetlands and establishes conditions of enforcement responsibility on agricultural lands.</p>	<p>Unifies the program in the Corps of Engineers which currently staffs and manages the program, as it has since inception of the program.</p> <p>Engages the FWS in a comprehensive site-by-site classification of wetlands according to their relative value. Other Federal agencies may comment on Section 404 permits but have no authority to deny permits.</p>	<p>DUAL REGULATORY REGIME</p> <p>Retains Corps/EPA dual permitting system.</p> <p>Adds another agency, the Department of Commerce, to the consultation process, along with the Department of Interior (through FWS). Consultation will be required by the Corps to either adopt the recommendations of both Commerce and Interior or supply written reasons for not adopting the agencies' recommendations.</p>	<p>Retains Corps/EPA dual permitting system.</p> <p>Requires EPA to make its review and a veto determination within six months of the Corps permit decision.</p> <p>Gives the Department of the Interior review authority over the Corps and EPA, for meeting the goals of the action 404 program in achieving program goals.</p>	<p>Retains Corps/EPA dual permitting system.</p>	<p>Recommends that Congress assign the responsibility for identification and maintenance of a wetlands program to one agency and require consultation with other affected agencies.</p>

CURRENT LAW	ADMINISTRATION PLAN	HR 1330: HAYES BILL	HR 360: EDWARDS BILL; AND S. 1185: BOXER BILL	S. 1304: BAUCUS-CHAFFE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT--May, 1980 (Gov Bill Clinton of Arkansas, Chairman)
<p>Allows issuance of 5-year nationwide, regional, and statewide ("general") permits which regulate activities having minimal impacts on wetlands. Activities qualifying for general permits do not need individual permits</p> <p>Does not provide for administrative appeals of delineation decisions, permit denials, or administrative penalties</p>	<p>Requires the Corps to undertake, in close coordination with relevant State and Federal agencies, a field program to identify, inventory, and map wetlands. Section 28 for the purpose of regularizing and improving its use. Would amend 404(a) to recognize the concept of regionalized "category of waters" general permits.</p> <p>Requires that the Corps modify its procedures to allow for public rulemaking process to establish regulatory d-admins for reaching permit application decisions (generally within 90 days of issuance of public notice), unless precluded by other laws, such as NEPA.</p> <p>Requires the Corps to develop an administrative appeals process, implemented after public rulemaking, designed to allow for administrative appeals of the Corps' determination that it has jurisdiction over a particular property, permit denial and administrative penalties.</p>	<p>Expands use of general permits for all but highest value wetlands provided that the Corps determines separately or cumulatively, will not result in the loss of significant wetlands values and functions. Provides for expedited review of eligibility for general permits.</p> <p>Requires final Corps decisions on individual permits within 180 days. Estimates activities under local wetlands plans approved by the Corps.</p> <p>Provides an administrative process for appeals of delineation decisions and permit denials.</p>	<p>Restricts issuance of general permits by: requiring EPA approval duration of permits to 2 years; and imposing the sequencing methodology on general permits, which ensures lengthy procedures equivalent to individual permits.</p> <p>Provides severely limited "expedited permit review" for activities disturbing less than 1 acre performed by private individuals or businesses that employ less than 10 employees</p> <p>Expedited review is not available if either the Corps, EPA, DOA, or the permittee or its contractor that the permit receive further review.</p> <p>Does not contain an administrative process for appeals of delineation decisions and permit denials.</p>	<p>Revises the current five-year time period for general permits</p> <p>Subject to review by the Corps, EPA, FWS, and RDA, allows a federal general permit to be issued for an existing state, tribal, regional or local regulatory program under which compliance with such a program is a general permit under Section 404.</p> <p>Appears to add mitigation requirements to general permits.</p> <p>Requires permit applications to be decided upon by the Corps, EPA, DOA, and FWS. Not to include actions involving NEPA and the Endangered Species Act; where EPA, ODA, DDI, DOT, Commerce or the affected state request a delay; and where the Corps and the applicant determine additional time is required.</p> <p>Allows appeal of permit denials</p> <p>Also allows appeal of permit approvals by third parties who participated in the comment period</p>	<p>Retains the current five-year time period for general permits</p> <p>Allows issuance of a Federal "programmatically general permit" based on a state, regional, or local government regulatory program with certain safeguards. Such permits may be issued as long as the federal government is authorized and is implementing a wetland and watershed management plan.</p> <p>Directs the Corps to establish regulations under which permits for "minor activities" -- those of one acre or less -- are processed through direct, secondary, or cumulative impacts" -- are processed within 60 days of receipt of application.</p> <p>No administrative appeals process provided</p>	<p>Recommends that Congress direct the Corps to establish procedures to establish minimum sized wetlands for regulation</p>
PROCEDURAL REFORMS:						
(a) General Permits (b) Expedited Review (c) Appeals Process						

CURRENT LAW	ADMINISTRATION PLAN	HR 1330: HAYES BILL	HR 360: EDWARDS BILL; AND S. 1186: BOXER BILL	S. 1304: BAUCUS-CHAFEE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT-May, 1980 (Gov. Bill Clinton of Arkansas, Chairman)
<p>All wetlands, despite widely varying values and functions, are subject to the same level of regulation. There are no distinctions between wetland functions and values. Relative functions and values are considered only when mitigation proposals are reviewed, much less in the process.</p>	<p>Provides that variations in wetlands functions can be applied in connection with watershed planning.</p> <p>EPA and Corps issued guidance to field staff clarifying and standardizing implementation of Guidelines to make regulatory decisions more objective and minimize environmental impact.</p> <p>Requires expediting development of new approach for wetlands functional assessment known as Hydrogeomorphic Classification System (HGS).</p> <p>Advance planning efforts will assess functions and values of local isolated wetlands and headwaters in connection with field level review of NWP 26 to develop regional descriptions of the wetlands and headwaters that are not subject to authorization under NWP 26.</p>	<p>Provides up-front classification of wetlands and requires that applicants have early notice of the type of wetlands involved. The most valuable class of wetlands is more strictly regulated than current law. Most wetlands will fall in the second category and will be regulated similarly to current law. Regulations will be more strict than existing test and incentives for mitigation.</p> <p>Only those lands that possess or <i>minimize</i> wetlands functions or values would be unregulated; the Corps has authority to monitor activities on even those wetlands through reporting requirements.</p>	<p>No classification. All wetlands are regulated to the same level of regulation. Makes no distinctions based on the relative environmental importance of the land.</p>	<p>Provides for "assessment of the functions and relative value of wetlands" only in the context of voluntary state wetlands and watershed management plans. Does not create this limited classification scheme with differing levels of regulation.</p>	<p>Contains no real classification scheme.</p> <p>Provides for "characterizing wetland resources" on a watershed basis in the context of state wetlands conservation programs. However, there is no correlation of the degree of regulation with the various functions and values of wetlands.</p>	<p>Notes that current definitions do not adequately differentiate the relative quality and value of wetlands. Calls for all levels of government and the private sector to support preservation of "high quality" wetlands.</p> <p>Recommends that Congress establish a wetlands protection program with incentives for landowners to "protect and establish high quality wetlands."</p> <p>Recommends that such a program emphasize conservation and reestablishment of bottomland hardwoods.</p>
<p>CLASSIFICATION OF WETLANDS</p>						

CURRENT LAW	ADMINISTRATION PLAN	HR 133D: HAYES BILL	HR 36D: EDWARDS BILL, AND S. 1186: BOXER BILL	S. 1304: BAUCUS-CHARFEE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT--May, 1980 (Gov Bill Clinton of Arkansas, Chairman)
<p>Statutorily limited to the discharge of dredged or fill material. Recent agency attempts through rulemaking to expand the range of regulated activities to include drainage are of questionable legal validity under current law.</p>	<p>Issued final rule clarifying definitions of "discharge of dredged material" and "discharge of fill material." Requests that Congress take corresponding regulatory reform, including classification and regulation of activities related to their relative values and functions.</p> <p>The Corps will coordinate with EPA to develop additional general permits authorizing minor activities with only minimal adverse environmental effects.</p>	<p>Expands regulated activities by statute to include drainage, channelization and accretion of wetlands as part of overall regulatory reform, including classification and regulation of activities related to their relative values and functions.</p>	<p>Broadly expands regulated activities to include any "other alteration of navigable waters" which includes direct activities as well as possible indirect activities such as diversion of water. The Corps will coordinate with EPA to determine whether activities created by HR 36D is difficult to determine</p>	<p>Broadly expands the activities regulated under the federal program under the federal program. Expands federal jurisdiction to include "any addition" of dredged or fill material into navigable waters or would have the effect of destroying or degrading any area of navigable waters."</p> <p>Expands the definition of "fill material" to include "any material that has the effect of replacing, changing the bottom elevation or configuration of a water body."</p>	<p>Very similar to the Edwards bill provision. Broadly expands the activities regulated to include "other activities in navigable waters which impair the flow, reach, or circulation of surface water, or which result in a more than momentary change in the hydrology of such waters, or in the type distribution, or diversity of vegetation in such waters."</p>	<p>Recommend expansion of the activities regulated under the federal program to include drainage. Recommend a sampling prior converted croplands from regulation</p>
MITIGATION						
<p>A recent Corps/EPA Memorandum of Agreement imposes a strict "sequencing" methodology which stresses avoidance of activities in wetlands, regardless of relative environmental value or economic and other social considerations. The effect of sequencing is to encourage mitigation banking, since mitigation can be considered only after avoidance and minimization efforts are analyzed and found insufficient.</p> <p>The current "sequencing" test supports the Agency's position. Memorandum of Agreement did not allow public notice and comment.</p>	<p>Endorses sequential approach to mitigation and supports use of mitigation banking in appropriate circumstances. Provides for the issuance of a guidance letter clarifying the requirements for developing compensatory mitigation projects, as well as referring to the proposed guidance letter issued on mitigation banking.</p>	<p>Employs "sequencing" in high value areas, where environmental considerations are presumed to outweigh economic and other considerations. For other areas, replaces "sequencing" with the "public interest" balancing test, which includes economic and social considerations. Provides for mitigation banking, preservation, enhancement, or restoration, contributions to state mitigation bank programs, off-site mitigation, and construction of coastal erosion protection projects.</p> <p>Requires mitigation banking projects meet 25 year bonding requirements, and similar assurances of legal and financial responsibility.</p>	<p>Statutorily expands sequencing by requiring that no permit may be issued if there is a practicable alternative which would have less adverse environmental impact (i.e., precludes balancing of public interest factors).</p> <p>Calls for a report to Congress on the effects of compensatory mitigation taken pursuant to permits.</p>	<p>Revises current sequencing requirements.</p> <p>Calls for the Corps and EPA to issue joint rules for the establishment, use and oversight of mitigation banks.</p> <p>Lost wetlands are to be replaced to the extent practicable within the same project area. Mitigation banks for restoration projects only, not creation projects.</p> <p>Employs "consistent and scientifically sound methods" to determine mitigation bank "debit" and "credit" based on wetland values.</p> <p>Requires payment of "fee charges" for participation in mitigation banks based on the "full costs" of replacing lost wetland functions and acreage</p>	<p>Consolidates the current Corps/EPA sequencing methodology.</p> <p>Contains provisions for the establishment of mitigation banks that generally reflect those of the Baucus-Charfee bill.</p> <p>Allows mitigation banks to be used for creation, as well as restoration or enhancement. Establishes a minimum compensation ratio of 1:1 for restoration projects, requires "larger" compensation ratios for creation, enhancement and preservation.</p>	<p>Recommends that states establish wetland banking systems. Calls for Congress to direct appropriate federal agencies to develop procedures that clearly identify mitigation requirements</p>

CURRENT LAW	ADMINISTRATION PLAN	HR 1330: HAYES BILL	HR 360: EDWARDS BILL; AND S. 1196: BOXER BILL	S. 1304: BAUCUS-CHAFEE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT - May, 1990 100v Bill Clinton of Arkansas, Chairman
<p>Gives states authority to assume the Section 404 program. But EPA seems to be reluctant to do so. Only one state has assumed the 404 program. A recent EPA study found that state assumption has failed largely due to lack of funding and inadequate flexibility in letting states design their own programs.</p>	<p>Promotes advance planning and wetland protection by State, Tribal, and local governments and private citizens. Provides incentives for States to develop watershed protection programs. Provides that State/Tribal wetlands conservation programs should endorse the Wetlands Delineation Cooperative Program. Provides that EPA, the authority to use the Wetlands Delineation program to fund development and State assumption of 404 program. Also recommends that Congress authorize partial assumption of 404 program by States and Tribes, in anticipation of full assumption. Would amend 404(b) to authorize issuance of Programmatic General Permits that defer to local regulatory programs implementing approved watershed plans</p>	<p>Gives states authority to assume the 404 program, establishes more flexible criteria to encourage state assumption and deference to local planning.</p>	<p>Repeals current law. Does nothing to simplify the process for state assumption of the 404 program.</p>	<p>Provides states with incentives to establish wetlands and watershed management plans. Plans are to include mapping wetlands and potential restoration sites, assessing the functions and relative values of wetlands, and developing and implementing measures to achieve increased protection and restoration of wetlands within the watershed. Allows general permits to be issued for an existing state, tribal, regional or local regulatory program approved by the Corps, EPA, FWS and NOAA. If the program provides the same degree of protection as the federal program and provides an opportunity for public review</p>	<p>Provides limited funding to assist states in assuming the 404 program or for issuance of state programmatic general permits. Provides limited funding to assist states in developing and implementing wetlands conservation plans. Such plans are to include mapping and "characterizing" wetlands on a watershed basis identifying sites with restoration or reconnection potential, and "water protection strategies for reducing causes of wetland degradation and restoring wetlands on a watershed basis."</p>	<p>Recommends expansion of state role through establishment of an area wide system of mitigation banking. Calls for Congress and coastal states to study and estimate approximately 20 freshwater and sediment diversions to replicate the natural action of the Mississippi River to restore vegetated marshlands and wetlands</p>

CURRENT LAW	ADMINISTRATION PLAN	HR 1330: HAYES BILL	HR 350: EDWARDS BILL; AND S. 1195: BOXER BILL	S. 1304: BAUCUS-CHARFEE BILL	ASSOCIATION OF STATE WETLANDS MANAGERS DRAFT BILL	LOWER MISSISSIPPI DELTA DEVELOPMENT COMMISSION REPORT-MAY, 1980 (Gov. Bill Clinton of Arkansas, Chairman)
<p>No statutory definition exists. The agency definition is ambiguous and in flux. The 1985 Federal manual for defining wetlands expanded the definition; the 1991 manual would have narrowed the definition. EPA and the Corps now use the 1991 manual.</p> <p>Section pending the outcome of the National Academy of Sciences (NAS) study currently underway. None of these changes, except the 1991 manual, were subject to public notice and comment.</p>	<p>Provides for continued use of 1987 federal manual until NAS study is completed, with any subsequent changes subject to a process that includes full opportunity for public comment.</p> <p>Defines "waters of the United States" to include the existing regulatory definitions implemented by the Corps and EPA, and the definition also should incorporate the existing regulatory definition of wetlands.</p> <p>Excludes "prior converted croplands" and "artificial wetlands" (such as non-tidal drainage and irrigation ditches excavated on uplands).</p>	<p>Requires Corps, in consultation with other Federal agencies, to establish standards for delineating wetlands. Such standards must require evidence of all three wetland parameters: hydrology, hydrophytic vegetation, and hydric soil.</p> <p>Provides for public notice and comment on any changes to the definition.</p>	<p>Prohibits clarification of the definition until the NAS study is complete. Requires any subsequent definition to consider the NAS findings. Makes no provision for public notice and comment procedures. Provides limited funding to assist land owners in delineating wetlands.</p>	<p>Expands the definition of wetlands beyond the definition contained in Corps and EPA regulations which includes swamps, marshes, and bogs, to include "fens, potholes, play lakes, vernal pools, and similar areas."</p> <p>Prevents further modifications of federal guidelines for delineating wetlands until the NAS study is complete. Provides for continued use of the 1987 federal manual until new guidelines are issued. Calls for new federal guidelines for delineating wetlands to be issued after the study is completed and the public notice and comment. The guidelines are to take into account regional variations in hydrology, soils and vegetation.</p>	<p>Requires use of the 1987 federal manual until the NAS study is complete. Directs the Corps, in cooperation with the EPA, to develop materials and conduct training courses for consultants, state and local governments, and landowners explaining the use of the 1987 federal manual. Allows the Corps and EPA, in cooperation with the states, to develop supplemental criteria and procedures for identification of regional wetlands types.</p>	<p>Calls for a definition of wetlands that takes into account the values of wetlands and considers relative wetlands values.</p>
<p>76% of the wetlands in the lower 48 states are privately owned, yet the current system does not consider possible rankings of the economic uses of their land by regulatory restriction.</p> <p>In the last two years, the U.S. Claims Court has found Section 404 permit denials to be "takings" requiring compensation in several cases.</p>	<p>No specific provision.</p> <p>Supports technical planning activities with property owners, and other programs that assist landowners in the implementation of such plans through restoration, technical assistance and information programs.</p>	<p>Provides that restrictions on the highest value wetlands, which can result in denial of all economic activity, can be deemed a taking: owners of land in this category may be required to sell the land to other forms at the fair market value and transfer title to the government, or retain title to the property and abide by the restrictions on land use.</p>	<p>No provision.</p>	<p>No provision.</p>	<p>No provision.</p>	<p>No provision.</p>
PROPERTY RIGHTS						

STATEMENT OF DEAN R. KLECKNER, PRESIDENT, AMERICAN FARM
BUREAU FEDERATION

Thank you Mr. Chairman. My name is Dean Kleckner, President of the American Farm Bureau Federation. We appreciate the opportunity to speak to you about the reauthorization of the Clean Water Act and proposed wetland provisions. From the perspective of farmers and ranchers, wetlands is one broad aspect of the Clean Water Act that needs your attention.

Farm Bureau supports the identification, protection and enhancement of quality wetlands if private property rights are protected and economic growth is enhanced. Rice growers are a prime example of what people will do for wetlands when incentives of owning private property and understanding the opportunity for economic growth exist. Three million acres of rice are planted each year in the United States. Rice farmers are making a specific effort to enhance wildlife habitat by winter flooding 1 million acres of rice fields. However, there are several obstacles that Congress must deal with in order to accomplish the goal of protecting and enhancing quality wetlands:

- First, there is the need for a clear definition of wetlands.
- Second, Congress, using sound science, must develop a comprehensive policy that clearly spells out which wetlands are important enough to be federally regulated.
- And third, adequate resources must be committed to make it work.

The Problem

From Farm Bureau's perspective, there are five major problems with the current wetlands regulations. First, the Clean Water Act was not designed to preserve wetlands—it was designed to prevent discharge of toxic materials into waters of the United States. Second, current wetland regulations fail to respect private property rights. Third, bureaucratic expansion of federal control over farmed land did not allow for public review and comment. Fourth, it is bad public policy if only professional government regulators can identify a wetland. And fifth, many farmers' attempts at good-faith compliance have been frustrated and proven prohibitively costly to resolve, thus placing the viability of the farming or ranching operation in jeopardy.

Private Property Rights

Central to the wetlands issue is the question of private property rights. More than 75 percent of wetlands are on private property. The 5th Amendment to our Constitution provides that private property may not be taken for public use without just compensation. Historically, the landowner has borne the burden of protecting this resource, both in the form of direct cost, and restricted use of property. We strongly believe there is a public obligation to shoulder these costs, since the public at large is the beneficiary.

Farm Bureau recommends that Congress reaffirm that wetlands are located on private property, and if a section 404 permit is denied or if unrealistic conditions are placed on obtaining a permit, the public owes the individual private landowner compensation for the protection of a public resource.

Detailed Comments and Recommendations on S. 1304

Section 3. Declaration of policies and goals, Section 101(a) (33 U.S.C. 1251(a)): Farm Bureau is very concerned about the vague nature, as stated, of a national policy to achieve, through regulatory and non-regulatory strategies, the restoration and no overall net loss of wetlands. We have the following questions about the proposed goal of both S. 1304 and the administration's new policy to achieve no net loss of remaining wetlands and increase the quantity and quality of wetlands in the United States.

- Does S. 1304 require a net gain in wetlands?
- How many acres of wetlands does S. 1304 require to be restored?
- Does S. 1304 reaffirm the policy of sequencing in which wetlands are avoided at all costs?
- What incentives does this committee recommend to encourage wetland restoration?
- Who will be responsible for a consistent wetland inventory in order to monitor restoration and efforts?
- Will the public compensate landowners for the protection of wetlands, or are individual landowners responsible for the cost of protecting the national wetland resource base?

- Should wetland regulations require a cost/benefit approach that balances private property rights, environmental quality, economic growth, and public health and safety with the benefits of the wetland protection/alteration?

Farm Bureau Recommends: The goal of this act should be directly related to water quality standards in the Clean Water Act and based on the scientific contribution wetlands have in managing water quality for human health and safety. S. 1304 should recognize and differentiate functions and values of existing wetlands and protect existing wetlands through a strategy of permits, compensation and mitigation.

Furthermore, the goal of increasing the quantity and quality of wetlands should be achieved through a voluntary non-regulatory strategy such as a wetlands reserve program. The goal should be to restore degraded wetlands, as well as previously drained wetlands, to the level necessary to achieve the water quality standards within a watershed without endangering other aspects of human health and safety. Tying the desire for an increase in quantity of wetlands to water quality standards puts a scientifically supportable and potentially definable cap on the amount of increase, rather than leaving the amount of increase totally open-ended.

We propose the following language:

“(8) it is the national policy to-

“(A) achieve, through a regulatory strategy of permits, compensation and mitigation, protection of existing wetlands and recognize that wetlands have different functions and values;

(B) achieve through voluntary non-regulatory strategies and the wetlands reserve program, the restoration of degraded and previously drained wetlands to increase the quantity and quality of the wetland resource base of the United States to the level necessary to achieve the water quality standards of the Clean Water Act; and

(C) provide for human health and safety while balancing the cost/benefits of regulations, economic growth and environmental quality.”

Section 4. Definition and Delineation of Wetlands

The temporary return to the 1987 wetland manual is an improvement over the 1989 manual, but it too contains some of the uncertainties that led to the original controversy. The conflict over wetland delineation stems from the lack of a clear public policy to apply good science. In that context we look forward to the product of the National Academy of Sciences, but we do not view the NAS study as a panacea. As members of the Senate, you, not the NAS, must be the arbiter of that conflict, the source of the compromise for what constitutes a federally regulated wetland. Eighteen more months of study will not resolve it.

The definition of navigable waters in S. 1304 is expanded to include potholes, playa lakes, vernal pools, and similar areas. This section also provides for changes in the delineation of wetlands only after the conclusion of the National Academy of Sciences study of wetlands.

Ultimately, private landowners should not be required to bear the cost of protecting “wetlands” that are recognized by the Clean Water Act and S. 1304 as being a “public benefit,” or in “the national interest.” Farm Bureau opposes the protection of “wetlands” that look convincingly like dryland or farm fields, nor should government policy protect areas as wetlands that only professional or government “scientists” can identify”. Congress should and must determine the overriding policy justifications, that certain types of wetlands may qualify scientifically as a wetland but should not be subject to Federal wetlands regulations.

Concern: Farm Bureau is very concerned that this definition and explicit expansion could mean that any of these geographic locations is a jurisdictional wetland, regardless of the absence of any required wetland criteria. It also fails to differentiate between a wetland by definition and a jurisdictional wetland.

Farm Bureau recommends:

- “Normal circumstances”—defined in this legislation to mean current physical conditions.
- Wetlands should be defined as naturally occurring areas of predominantly hydric soils, as determined by soil taxonomy, that support hydrophytic vegetation because of existing wetland hydrology. A hydric soil is a soil that in its natural state is saturated, flooded or ponded long enough during the active growing season to have predominant anaerobic conditions at the surface; and hydrophytic vegetation means a predominance of obligate wetland plants and facultative wetland plants.
- The avoidance of regional delineation manuals.

- Specific qualifications must be required for the individual making the delineation. Agencies administering delineation must recognize and be required to use the best available science in each of the individual scientific disciplines of soil science, plant science, and hydrology.
- Congress must require the National Academy of Sciences report to be scientifically field tested and the results subject to both congressional and public scrutiny before it is released or integrated into legislation.
- Congress should designate the Secretary of the Army acting through the Corps of Engineers as the sole authority for section 404 permits. In order to streamline the regulatory process, section 404 (c), the veto power of EPA should be removed. A streamlined process would give EPA, DOT and USDA general oversight, but not on a permit-by-permit basis.

Section 4.(b)(4); Delineation Training, Certification and Outreach.

The Administration has accurately characterized the situation by stating that "for too long, contradictory policies from feuding Federal agencies have blocked progress, creating uncertainty and confusion." Farm Bureau is concerned this situation will continue unless Congress requires development of a strong delineator certification program. The goal should be to have anyone who delineates wetlands certified and reviewed for consistency.

Farm Bureau supports S. 1304's efforts to have all federal agencies and private sector delineators trained and certified to improve accuracy and consistency in delineating jurisdictional wetlands. However, it fails to require an independent review board with explicit oversight and individual delineator performance evaluation.

Farm Bureau Recommends: The goal of this section should be to develop a national certification program that strives for consistency among all certified delineators.

Legislation should include a national certification program that requires:

- a) proficiency standards,
- b) 5-year certification duration,
- c) specific performance review and evaluation that would include:
 - 1) random field performance reviews;
 - 2) random data sheet performance reviews;
 - 3) emergency performance review based upon complaints; and
- d) continuing education.

Section 4.(b)(5); Assisting Small Landowners with Wetlands Delineation.

This section initiates the concept of federal assistance for small landowners and authorizes \$5 million to facilitate compliance with wetland regulations.

Concern: Farm Bureau is very concerned about the vague nature and limited resources committed to this proposal. We believe that individual assistance should be provided for the numerous legislative and regulatory mandates, but question this provision based on size, and limited resources.

Farm Bureau recommends Congress strengthen this section to include funding and federal assistance to anyone subject to the rules and regulations mandated by this legislation.

Section 6. Permit Processing Improvements-

This area is in need of reform to provide timely review and decisions on permit applications. We agree with S. 1304 in its attempt to provide decisions within a 90 day period.

Concerns: The timeliness of the review process may still drag on considerably. Also, Farm Bureau strongly believes Congress should include an appeals process for wetland delineations, permit denials and administration penalties.

Farm Bureau recommends that no more than one additional 90 day extension can be requested by any one agency or combination of agencies if additional data is required for an individual section 404 permit. If a decision is not made by the end of these time frames the permit should be considered granted. (See attached amendment)

Farm Bureau recommends the following regarding Costs and Fees of Parties: In court cases where a party other than the United States prevails, the prevailing party should be awarded fees and other expenses in connection with the proceeding regardless of whether the proceeding is brought by the United States for violations of the Act or by the prevailing party for issuance or denial of a section 404 permit. If the party is dissatisfied with the determination of fee and other expenses awarded, there should be an additional appeals process available.

Farm Bureau recommends Congress address an additional problem with the 404 program—an equitable, efficient and inexpensive means for landowners to appeal 1) delineations, 2) permit applications, and 3) penalties and fines without going to court.

Section 7. General Permit Improvements

Farm Bureau supports this section that generally continues the concept of general permits. We believe Congress should that allow state, regional or nationwide permits that will allow activities that cause only minimal adverse environmental effects.

Concern: Farm Bureau questions proposals that will make individual and general permits contingent on the development of watershed wetland management plans. We are also very concerned about what appears to be a new requirement to add mitigation requirements to general permits.

Farm Bureau recommends that this proposal should requiring the Corps to issue general permits for activities with minimal adverse environmental effects. We support general permits for activities impacting low value wetlands and oppose requirements contingent on mitigation.

Section 8. Coordination and Clarification of Program Concerning Agricultural Activities-

(b) Prior-Converted Cropland

The Environmental Protection Agency and Corps of Engineers have promulgated rules to exclude prior-converted cropland from the scope of Section 404. This was an important change but it did not go far enough to prevent confusion. Specifically, if the production of annual crops is required to maintain this exemption, problems will arise when farmers plant hay, orchards and other perennial crops on this land. This has a huge potential for providing conflict between the farm community and government regulators.

We are however, pleased to see the exemption for prior-converted cropland in S. 1304 and that the current administration has registered its support for this provision being placed into law but Congress must address the annual/perennial crop dilemma.

Farm Bureau recommends that Congress specifically exclude prior-converted cropland from section 404 regulation in this legislation.

Farmed wetlands

The Administration and S. 1304 recognize that prior-converted croplands are no longer wetlands. They should also recognize that some farmed wetlands no longer exhibit wetland characteristics and should not be regulated. Prior-Converted Croplands were once wetlands that were too wet to farm without drainage. Farmed Wetlands, on the other hand, are areas that are wet so infrequently that they can be farmed without drainage. Farm Bureau believes these areas should not be jurisdictional wetlands.

Farm Bureau recommends that Congress exclude tilled cropland and improved pasture from section 404 jurisdiction.

Section 8(d) Exempted Activities—Section 404(f)(1) (33 USC 1344(f))

Concern: Normal Farming Practices—Section 404(f) of the Clean Water Act intended for farms, ranches and forestry operations to continue “normal” farming and ranching activities including, but not limited to plowing, seeding, cultivating, minor drainage, harvesting, ditch maintenances, tile maintenances, brush clearing, etc., without having to obtain individual permits. Despite that intent, many of the conflicts between farmers and regulators are due to attempts by field office regulators with no familiarity with agriculture to define what constitutes a normal farming practice.

Farm Bureau recommends that Congress clarify that all farming activities are to be exempt from permit requirements. Because of the diversity of agriculture among commodities and regions of the country, Congress should restate and further clarify its intent to include all land used in production agriculture for food, fiber, timber and biomass.

Farm Bureau recommends that the word “normal” be dropped from the law in section 404(f)(1) because it has specific relation to the date the law was passed and thus inhibits the adoption of new or different farming practices at some future date.

Farm Bureau recommends the specific recognition that ranch roads should be allowed to be constructed and maintained the same as farm and forest roads.

Section 8. Soil Conservation Service

The USDA Soil Conservation Service should be the coordinating agency delineating wetlands on agricultural land.

We strongly agree with the administration's recommendation to make SCS wetlands delineations the final government position on the extent of Swampbuster and Clean Water Act jurisdiction on agricultural lands. However, we believe this concept needs to be incorporated in S. 1304 and enacted into law. It would provide much needed consistency and greatly reduce potential conflict.

Concern: We believe there are several reasons why SCS is the appropriate agency to delineate all wetlands on agricultural lands. SCS has offices in nearly every county, making it much more cost-effective and timely for them to do delineations than it would be for any of the other agencies. SCS is a technical assistance agency and is better able to recognize relict wetland situations where hydric soil is still present but hydrology has been removed. In addition, SCS is currently administering the Swampbuster program.

Farm Bureau strongly recommends that authority for delineation of all wetlands on agricultural land be the sole responsibility of the Soil Conservation Service (SCS).

Section 8. Exclusion of Man-Made Wetlands

Many wetlands are created, intentionally or unintentionally, as a result of human activities. Wetland vegetation that results from crop irrigation, saturation from broken drain tiles, flooding as a result of neglected stream maintenance, standing water from poorly designed public works projects, and the construction of farm and stock ponds are a few examples.

Farm Bureau recommends that artificially created wetlands should not fall under 404 jurisdiction because they are man-made and often unintentional. We support the amendments in S. 1304 regarding artificially created wetlands.

Farm Bureau recommends Congress recognize under certain circumstances, that some types of agricultural production are entirely compatible with conserving wetland functions and values. Forestry, cranberry and blueberry production, haying/grazing and some types of aquaculture are prime examples. Where such commodities can be produced in manner consistent with overall wetland functions, they should be encouraged and allowed to expand. Compatible activities such as cranberry production and aquaculture should be specifically mentioned along with stock watering, irrigation and rice production. Language exclusively limiting these artificial lakes and ponds to stock watering, irrigation and rice production should not limit the stocking of fish or seasonal efforts to provide waterfowl habitat.

Section 9. Mitigation Banking

Farm Bureau supports proposals to provide for mitigation banking.

Concern: Farm Bureau is concerned that this proposal provides no guidance on mitigation requirements (acreage), lacks specific guidelines in the replacement of functions and values and requires mitigation "in advance".

Farm Bureau recommends mitigation requirements based on the replacement of wetland functions, but in no case should acreage replacements exceed one acre for one acre. We also recommend changing the "mitigation bank" definition to remove the requirement for advance mitigation when simultaneous efforts will be practicable.

Section 9. Classification of Wetlands

Concern: Changes to section 404 should include a system of classifying wetlands, recognizing that not all wetlands share the same ecological value or perform the same functions. Those that are truly unique may be deserving of greater protection, whereas those that are marginal or only technically meet wetlands criteria should be subject to less stringent oversight.

Farm Bureau strongly recommends that the federal government adopt a standard method for inventorying wetlands which includes soil taxonomy as the basis for determining wetland soils, classifies wetlands on the basis of function and value, and requires that all government agencies adhere to this single inventory methodology. We suggest that the Corps of Engineers be mandated to conduct and maintain the inventory of wetland functions and values in consultation with the Soil Conservation Service. Regulatory efforts should only offer a protection to the nation's most valuable and unique wetland areas.

Section 11. Reports and Analysis-

Section 11 calls for collection of data and reporting to Congress and the public every two years regarding effects on navigable water of activities conducted under permit.

Concern: Currently all four federal agencies have wetland inventories that are conflicting and inconsistent. Farm Bureau strongly supports an accurate, consistent and current inventory of functions and values. We believe there should be a consistent definition for accounting and inventorying values and functions of wetlands in order for this reporting system to have policy implications.

Farm Bureau recommends that Congress consolidate all activities for wetland inventories into a national inventory maintained by the Secretary of the Army in consultation with the Soil Conservation Service.

Farm Bureau also recommends that the Fish and Wildlife Service's National Wetlands Inventory should end. In previous testimony to the House of Representatives we called for a national inventory of wetlands. However, a recent Duke University study¹ has caused us to believe that continuation of the National Wetlands Inventory in its present form would be redundant and no more useful than existing soil maps. The study found that National Wetland Inventory maps are accurate no more than 35 percent of the time. This is the same level of accuracy obtained by the Soil Survey maps already produced by the U.S. Soil Conservation Service. We do not need another inventory for wetlands if it is going to be no more accurate than maps we already have in most counties. Existing soil maps developed on the basis of soil taxonomy can be used to help make the first cut in wetland determinations, but no final determination should be allowed until an on-site delineation is performed.

As lands are taken out of production due to their classification as "wetlands", landowners have sought and obtained lower tax assessments based on the loss of value of wetland property. This erodes local tax bases, which are already strained to the limit.

Farm Bureau recommends that the EPA and the Corps of Engineers monitor the effects of the wetland regulation program on private property rights and on local tax bases, and report to Congress every two years on the subject.

Section 12. Wetlands Conservation, Management and Restoration

Section 12 requires the development of a watershed wetlands management plan. As written, it provides no mechanism for compensation for the loss of private property rights and/or restoration of wetlands or riparian areas. Also, it appears to add requirements for individual section 404 permits for all activity within a watershed unit (land-use planning). If so, this requirement extends section 404 permitting activity beyond jurisdictional wetlands.

Concern: Many farmers currently maintain as many as a dozen separate resource management plans. These management plans involve soil conservation, ground and surface water quality, animal waste, wetlands, and activities within coastal zones. These efforts, required by legislation, are very time consuming, confusing and redundant. We strongly believe proposals mandating management plans for clean water, wetlands, coastal zone, conservation, etc., should be consolidated. However, Farm Bureau is very concerned that such efforts will be interpreted by the administration and the courts as a congressional mandate for land-use planning and, therefore, result in the regulation of all activity within a watershed. Farm Bureau is strongly opposed to central or national land-use planning.

Farm Bureau Recommends Congress explore the proposal included in Vice President Gore's reinventing government report that calls for a consolidation of various environmental management plans into one farm plan. We believe one management plan, established from among affected private landowners within a specific watershed or management unit, will streamline and enhance agriculture's conservation and environmental quality efforts. We believe wetlands management should be part of the plan.

We recommend deletion of Section 12 of S. 1304 in its entirety and that wetland management concepts be integrated into one conservation effort.

Summary

We believe that the suggestions contained above will greatly improve the wetland regulatory program and reduce many of the inequities and difficulties faced by landowners and small businessmen. Farm Bureau supports the efforts of the National

¹ Street, William H. May, 1993. Field Reconnaissance of National Wetland Inventory Maps in the Carolina Slate Belt Region of Durham County, North Carolina. Duke University.

Wetlands Coalition, although the voting delegates of the American Farm Bureau chooses not to endorse the no-net-loss goal.

We would encourage and assist any constructive and cooperative efforts to resolve the question of financing the conservation of true and valuable wetlands. We look forward to working with you in this effort.

**TESTIMONY OF DOUGLAS B. INKLEY, DIRECTOR, BIODIVERSITY
CONSERVATION DIVISION, NATIONAL WILDLIFE FEDERATION**

Thank you for the opportunity to present to the Clean Water, Fisheries and Wildlife Subcommittee this statement on wetlands protection in the context of the reauthorization of the Clean Water Act. The National Wildlife Federation (NWF) is the nation's largest conservation education organization. Founded in 1936, the NWF works to educate and assist individuals and organizations to conserve natural resources, and to protect the Earth's environment. Our members and supporters are deeply concerned about the continued loss of wetlands and continue to work for the protection and expansion of our nation's valuable wetland resources.

Our testimony is outlined as follows: the first section explores the many functions and values of wetlands; the second section examines the status and trends of our nation's wetland resources; in section three, the NWF wetlands agenda is explained point by point; and section four addresses the NWF position on pending wetlands legislation. In addition, because of the importance of the issue, section five addresses Alaska's wetlands. And finally, section six summarizes and concludes the testimony.

Wetlands Functions and Values

It is well established in the scientific literature that wetlands provide a number of critical ecological functions from which the American public derives enormous benefits—economic and otherwise. Dozens of texts and hundreds of publications have analyzed wetlands functions and values, thus this testimony can only hope to provide a cursory overview of the topic. Because economics remains the axis on which many wetlands debates turn, it is vital that this Subcommittee understand fully the value of wetlands. Any reduction of federal protection for wetlands will have many economic, ecological and social ramifications.

Scientists generally agree that wetlands provide the following values and functions:¹

- Flood Conveyance
- Storm Surge Abatement
- Water Quality—Nonpoint Pollution and Sediment Control
- Groundwater Recharge and Discharge
- Habitats for Rare and Endangered Species, Waterfowl and Other Wildlife
- Habitats for Fish and Shellfish
- Recreation
- Water Supply
- Food Production
- Timber Production
- Historic and Archaeological Sites
- Education and Research
- Open Space and Aesthetics

Our testimony below addresses several of these functions.

Flood Conveyance

At times of peak runoff, rivers and streams often overflow their banks into adjacent floodplains. Wetlands, which are often referred to as natural sponges, soak up much of the water and slow its rate of flow. This ability to absorb floodwaters and release them over time gives these systems extraordinary value as sites for temporary water storage. In short, when wetlands are present to retain this overflow, peak flows of flood water are reduced, and floods are made less damaging.

Isolated wetlands and other non-riparian wetlands also hold rain and runoff water and contribute to flood control. Wetlands are especially valuable as flood moderators because the water they retain almost never reaches watercourses when they are at flood stage. For example, a study conducted in Wisconsin showed flood flows to be reduced by 80% in basins with wetlands as opposed to basins without

¹ From, "Protecting America's Wetlands: An Action Agenda. The Final Report of the National Wetlands Policy Forum. 1988. The Conservation Foundation. Washington, DC. 69 pp.

wetlands.² In addition, increasing acreage of hard-surface areas, such as highways, shopping centers, and housing developments within a watershed adds to the frequency of adjacent river and stream flooding.

Numerous case studies from around the country demonstrate the important flood conveyance function that wetlands can provide. In one instance, the U.S. Army Corps of Engineers [hereinafter "Corps"] elected to preserve wetlands through acquisition rather than construct extensive flood control facilities for a portion of the Charles River near Boston, Massachusetts. The Charles River Natural Valley Storage Project, as it came to be called, was completed in 1984 and—by protecting rather than destroying wetlands associated with the Charles River—has resulted in an annual savings of \$17 million in flood damage.

When the Mississippi overflowed its banks this summer, we learned how important wetlands can be for flood abatement. The latest damage estimates for the mid-west flooding range from \$10 billion to \$15 billion in total damages with 40,000 to 50,000 homes and businesses affected. Some estimates reported by the Federal Emergency Management Agency have suggested that as many as 80 percent of the affected buildings may have suffered "substantial damage," meaning they sustained damage in excess of 50 percent of the buildings' value. Many of these buildings were inundated for long periods of time, and many were still underwater, weeks after the floodwaters first arrived. For the buildings that have undergone such flooding, there exists a substantial public health threat if they are ever reoccupied.

This widespread flooding in Iowa and Missouri provides a graphic illustration of what happens when wetlands are drained on a massive scale—in this instance for agricultural production. According to the U.S. Fish and Wildlife Service [hereinafter "FWS"], Iowa has lost 89 percent of its wetlands since Colonial times. Missouri and Illinois have lost 87 percent and 85 percent respectively. In view of the well-established linkage between wetlands drainage and flooding, it is no wonder episodes such as that experienced in Iowa occur so regularly and severely.

In testimony presented to the Domestic Policy Council on Wetlands, the Minnesota Department of Natural Resources [DNR] attempted to quantify the economic benefits derived to the state in reduced flood damages by protecting wetlands.³ According to the State, it costs nearly \$300 for each acre-foot of flood storage that has to be created. In other words, if development eliminates a one acre wetland that holds 12 inches of water during a storm, the public costs to replace that water storage is \$300. With an estimated 5,000 acres of wetlands being lost annually in Minnesota, the cost of replacement storage to the State's residents is \$1.5 million—which exceeds the State's annual appropriation for flood control. As the DNR concludes, wetlands drainage—based on flood conveyance function alone—is simply bad economics.

Storm Surge Abatement

Coastal wetlands absorb and temper the impact of storm surges. Wetlands associated with barrier islands, salt marshes, and mangrove swamps act as giant storm buffers and can weather major storm events without sustaining lasting damage. The low gradient of many shorelines and the capacity of wetland vegetation to absorb and dissipate wave energy combine to counteract storm surges and prevent shoreline erosion. As a result, federal flood insurance is no longer offered to coastal communities to subsidize destruction of mangrove swamps, an indication that the public is beginning to recognize the value of these wetlands.

When Hurricane Andrew came ashore in Florida and Louisiana last year, the nation was reminded of the tremendous difference the presence of a coastal wetland buffer can make. The storm hit both states with approximately the same strength, yet Florida sustained over \$20 billion dollars in damage to Louisiana's \$2.5 billion. A large wetland buffer was present in Louisiana, no doubt sparing the state's population from similar damages. Nonetheless, Louisiana loses approximately 25 square miles of coastal land each year to geologic shifts and human development pressures.

Coastal development, which destroys or degrades the wetlands in barrier islands and other critical coastal wetlands, estuarine salt marshes, or lakeshore marshes, is likely to cause costly storm damage through the loss of critical buffer capacity. Thus, the assemblage of dunes, marshes, and woody vegetation that comprise our coastal wetlands, are much more important for their natural values than as expensive tracts of real estate on which to build resorts or summer homes.

² Status Report On Our Nation's Wetlands. 1988. National Wildlife Federation, Washington, D.C. Hereinafter, "NWF Trends Report."

³ Testimony presented to the Domestic Policy Council's Wetlands Task Force. Ron Nargang, Director, Division of Waters. Bismarck, North Dakota. August 17, 1990. Hereinafter "DNR Testimony."

Water Quality, Sediment Control and Nonpoint Pollution

One of the most important functions of wetlands is their ability to help maintain and improve the water quality of our Nation's rivers and other waterbodies. It is precisely for this reason that wetlands and their protection is fundamental to achievement of the CWA goal to "maintain and restore the chemical, physical, and biological integrity of the Nation's waters." Wetlands improve water quality and control nonpoint pollution in a number of ways including removing and retaining nutrients, processing chemical and organic wastes, and reducing sediment loads to receiving waters.

One example of a natural wetland which enhances water quality is the Alcovy River system in Georgia. Researchers there found that—after flowing through a three-mile stretch of wooded swamp—water polluted with chicken excrement and human waste was significantly improved in quality. The value of this wetland for water pollution control alone has been estimated to exceed \$1 million annually. In another case, researchers at the University of Michigan learned that a 1,700-acre peat bog could treat 100,000 gallons of secondarily treated wastewater per day. The wetland removed roughly 70 percent of ammonia nitrogen, 99 percent of nitrite and nitrate nitrogen percent and 95% of total dissolved phosphorus from the wastewater, much of it in less than 24 hours.

According to the Minnesota DNR, combined federal-state expenditures in the State on nonpoint pollution control alone over the past decade approaches \$20 million dollars. Based on its experience, once again the State of Minnesota concluded that it is economic folly to continue eliminating its natural filters—wetlands—from the landscape while at the same time having to increase public expenditures to control non-point source pollution.⁴

Groundwater Recharge and Discharge

In some instances, wetlands play an important role in replenishing or "recharging" groundwater supplies. Surface water bodies connected to groundwater systems can recharge these systems as their waters migrate and percolate into the surrounding Aquifer. Wetland recharge sites serve an important role in maintaining groundwater levels at the local or regional level. In Massachusetts, a 2,700-acre wetland recharges a 16-square mile shallow aquifer at a rate of eight million gallons per day. The aquifer provides much of the water supply for the town of Amherst.

Prairie potholes, glaciated wetlands of the Northeast and Midwest, and southern cypress swamps are among the types of wetlands that serve as valuable recharge areas. These wetlands occur where there is an elevated water table, and they often contribute to adjoining shallow aquifers. Seasonal wetlands in the prairie pothole region are important to the maintenance of high water tables. High water tables, in turn, provide water for livestock during droughts and can be vitally important to the long-term water balance of the prairies by providing significant recharge to soil moisture.⁵ Not only does enhanced soil moisture recharged by prairie wetlands improve crop production, but emergent wetland plants found in these areas can provide abundant forage for livestock.

With supplies of clean water becoming increasingly precious throughout the Nation, we cannot afford to overlook the important role wetlands play in the cycle of water. Although research is needed to understand more fully the dynamics of water movement into, through, and out of wetlands, we do know that wetlands and groundwater are inextricably linked. Strong wetlands protection programs, therefore, are essential to protecting and providing an abundant and healthy water supply for all Americans.

Habitats for Rare and Endangered Species, Waterfowl, and Other Wildlife

Wetlands are critical habitats for a variety of plants and animals. Research has demonstrated that wetlands of less than one acre in size support an abundance of life forms. The loss of wetlands—both large and small—therefore impacts a broad array of plants and animals. One of the more obvious groups of animals to be affected by the destruction of wetlands is waterfowl.

Ducks, geese and swans are some of the more prominent wildlife species to make use of wetlands, and—as discussed below—are important economically. The well-being of waterfowl populations is tied directly to the status and abundance of wetland habitats. Simply said, as the wetlands go, so go our waterfowl. That waterfowl

⁴ DNR Testimony.

⁵ Hubbard, D.E. 1988. Glaciated prairie wetland functions and values: a synthesis of the literature. U.S. Fish and Wildlife Service. Washington, DC. 50 pages.

populations have reached record low levels in recent years should come as no surprise to anyone who understands that the Nation's wetlands inventory is at its lowest level in recorded history.

Besides waterfowl, a large number of federally listed threatened and endangered species rely on wetlands for their survival. As of June 1993, 408 animals and 384 plants were listed as threatened or endangered in the United States. According to a recent NWF report, of the 592 species listed in 1992, forty-three percent [256] of these animals and plants depend directly or indirectly on wetlands to complete their life cycle successfully. In addition, of the more than 2,500 plants in need of federal protection, as many as 700 are wetland-dependent or related.⁶

Aside from the threatened and endangered species that depend on wetlands for their survival, 5,000 species of plants, 190 species of amphibians, and 270 species of birds are estimated to occur in the Nation's wetlands. As if to confirm what many ecologists have long suspected, in 1991 The Nature Conservancy [TNC] reported that North America's aquatic fauna are in serious trouble.⁷ According to TNC, one out of three North American fishes and two out of three of the continent's crayfishes are rare or imperiled. Mussels appear even more threatened: one in every ten North American freshwater mussel species has become extinct in this century and 73 percent of the remaining species are now rare or imperiled. The primary reason for the decline of these "aquatic canaries"—not surprisingly—appears to be habitat loss and degradation.

For years man has relied on fish and wildlife resources as an "early warning system" and an indicator of environmental quality. For anyone willing to listen, the bells and sirens have sounded for our Nation's wetlands—these systems and the myriad plant and animal communities that depend on them are in serious trouble. Greater wetlands protection—not less—is the only remedy.

Fish and Shellfish

Wetlands are—literally—the cradle of the nation's seafood industry. Fish and shellfish depend on estuaries for spawning and nursery grounds, food production, and migration. A bumper sticker frequently seen in coastal North Carolina succinctly states the importance of wetlands to the fishing industry - "No Wetlands, No Seafood." It doesn't get any simpler, or truer, than that.

The National Wildlife Federation and others have long emphasized to Congress the importance of preserving wetlands to protect the nation's seafood industry. According to a recent report, the annual economic value of estuarine habitats is approximately \$14 billion. In the late 1980's commercial landings of estuarine-dependent species contributed some \$5 billion to \$6 billion to the economy. Despite these figures, over half of the nation's fishery-supporting wetlands have been lost, a fact that the National Marine Fisheries Service (NMFS) claims cost the fisheries \$208 million each year in the mid-1980's.

Recent data compiled and published by the NMFS dramatically underscore the wetlands-fisheries nexus.⁸ For example:

- 75% of U.S. commercial fish and shellfish landings consist of species dependent on coastal wetlands and estuaries.
- All fish species harvested commercially or recreationally off Atlantic, Pacific, and Gulf of Mexico Coasts have been reduced to historic low levels of abundance.
- There has been a 42% decline in commercial landings of fish and shellfish along the southeast Atlantic and Gulf of Mexico Coasts since 1982.
- The Maryland oyster harvest has declined 90% since 1890.
- Migratory fish in the Chesapeake Bay have declined, on average, 82% between the 1960's and the 1980's.
- 33% of the Nation's remaining shellfish waters are closed on any given day because of pollution.

Depending on the region of the country, the percentage of wetland-dependent fish species varies. For example, 98% of all marine species in the Gulf of Mexico spend part of their lives in wetlands and marshes. In the southeastern U.S. This percentage is slightly lower—94%. The trends are clear. Historic commercial fish and shellfish harvests are in steep decline and the primary factor for these declines appears to be the loss and degradation of wetlands.

⁶ NWF Trends Report.

⁷ Aquatic Animals: Endangerment Alert The Nature Conservancy Magazine. March/April 1991.

⁸ Chambers Report.

Florida has been dramatically affected. According to published accounts, shrimp harvests in that state have decreased by more than 75% since the early 1980's, and the fishery off the southwest tip of Florida is on the verge of total collapse. Scientists believe the collapse can be traced to a number of significant changes in the wetland-tidal ecosystem, including—restricted flows of freshwater from the Everglades, runaway development that has converted thousands of acres of mangrove swamps and other critical wetlands, loss of seagrass beds from onshore development, and high levels of pesticides and other contaminants in agricultural runoff.

Clearly, concern for a strong and proactive §404 program now extends well beyond the environmental community which—for the past 20 years—has worked to improve and expand on the program. And, while the environmental community will continue to press for improvements to §404, Congress can no longer ignore the burgeoning constituencies, such as commercial fishermen and shell fishermen whose passions, and—in many instances whose livelihoods—hinge entirely on a strong federal wetlands protection program:

Recreation

Recreational opportunities is another important contribution that wetlands make to the citizens of our nation. To illustrate the extent of waterfowl hunting, the U.S. Fish and Wildlife Service (FWS) estimates that in 1985 some 2.7 million waterfowl hunters spent almost 24 million hunter-days afield spending approximately \$600 million.⁹ In 1985, 6.3 million hunters (38 percent) spent almost 87 million days hunting on wetlands acreage. Clearly, millions of dollars have been spent in states represented by Members of this Subcommittee alone for recreational hunting on wetlands.

Recreational fishing is also an important wetland-dependent activity that generates millions of dollars annually. Nation-wide, according to FWS estimates, some 35.6 million anglers took 454 million trips for 511 million total days, spending almost \$24 billion in the process. As illustrated in Table 1, in the 10 states represented by this Subcommittee, over 9 million anglers spent more than 120 million days afield fishing in 1991. This, in turn, generated a total annual expenditure of \$5.2 billion dollars—an average of more than \$500 million per year per state.

Finally, the amount of money spent by Americans on other wildlife-related activities associated with wetlands involves billions of dollars each year. For example, the FWS estimates that 55 million people spent almost \$10 billion in 1980 observing and photographing waterfowl and other wetland-dependent species of birds. This is an annual expenditure of almost \$200 per person. Clearly, wetlands are important to the Nation for hunting and fishing, as aesthetic retreats and places of diversity for nature study, and are central to the enjoyment of millions of Americans.

Economic Benefits of Wetlands

Throughout the preceding, our testimony touched on a variety of ways in which wetlands provide major economic benefits. The message is simple: wetlands conservation is good economics. When a single three mile stretch of river in Alcovy, Georgia improves water quality at an estimated value of \$3 million annually, when wetlands refill the aquifers that supply drinking water to thousands of communities like Amherst, Massachusetts, and when wetland buffers save states like Louisiana billions of dollars in potential Hurricane damage, the benefits of wetlands protection become self-evident.

In Maryland, the Department of Economic and Employment Development estimates the value of the Chesapeake Bay at \$678 billion. Despite the degraded condition of the Bay—due partially to the loss of wetlands—over 100 million pounds of seafood are annually harvested by commercial fishermen, oystermen, and crabbers. As we have seen, seventy-five percent of commercial and recreational fish catches depend on wetlands for part of their life cycles, and commercial landings of estuarine-dependent species contribute \$6 billion annually to the U.S. economy.

Americans across the country spend billions of dollars each year on wildlife-related recreation activities. According to the FWS, almost 109 million people took part in wildlife-related activities in 1991, spending some \$59 billion in the process. In 1985, 55 million people spent almost \$10 billion dollars photographing waterfowl and other wetland dependent-species of birds alone. Be it for hunting, fishing or photographing wildlife, the value of wetlands as a recreational resource cannot be ignored.

⁹ 1985 National Survey of Fishing, Hunting, and Wildlife Associated Recreation. U.S. Fish and Wildlife Service. (hereinafter cited as FWS Survey 1985) p. 59

Wetlands have other economic benefits as well. By providing unique opportunities for research and education, containing historic and archaeological sites, providing habitat for rare and endangered species, and providing open space and aesthetic improvements to communities, wetlands improve surrounding property values and yield countless other benefits. Medical discoveries from plants, fish and wildlife have already been worth billions of dollars to industry, the full value of which also must be measured in terms of human life and health.

Because it is difficult to quantify their values, wetlands often fare poorly when competing against other uses. Government subsidy programs in the form of tax incentives and agricultural price supports often confer a competitive advantage oriented toward agriculture and development. As a result, destruction of wetlands continues at an alarming rate.

Wetlands Provide Jobs

It is important that the Members of this Subcommittee realize that wetlands provide jobs—jobs that in many cases are irreplaceable. The \$55 billion commercial and recreational fishing industry employs over 1 million workers across the country. In the 10 states represented by the Members of this Subcommittee, over 235,000 people work in recreational fishing-related jobs. Those same 10 states also support 36,000 commercial fishermen and 14,000 plant processing jobs.

The commercial and recreational fishing industry in Florida, for example, employs 110,444 people. The dockside value of the 1991 commercial catch was \$162 million; annual sport fishing expenditures in the state topped \$2 billion. In Minnesota, recreational fishermen spent \$816 million dollars in 1991, supporting 27,000 people in fishing-related industries. Without the wetlands, the fish and the jobs that depend on them will disappear.

Status and Trends of our Nation's Wetlands

Wetlands destruction is changing the face of America. Water that once remained in low spots and provided habitat for wildlife, now collects in ditches and tile lines and is rushed to the nearest stream. Millions of acres that once grew cat tails, wildrice, and pondweeds now support wheat, corn; houses, factories, airports and roads . . . many millions of acres of good waterfowl habitat have been destroyed and the loss continues.¹⁰

This straightforward observation on wetlands destruction, taken from the 1964 U.S. government publication *Waterfowl Tomorrow*, is more timely today than when it was first written almost 30 years ago. As discussed below, the loss of wetlands in America continues at an unacceptably high rate—almost 300,000 acres per year.

Considering the tremendous functions and values these systems provide, the fact that America has lost 50 percent of its wetlands, and the sobering realization that wetlands now occupy only 5 percent of the Country's surface area, should be cause for alarm. For too long this nation has embraced a myopic wetlands philosophy that can only be described as "squander now, pay later."

Unless this Congress awakens to the fact that the status quo is no longer acceptable, and unless its Members are bold and courageous enough to take aggressive and positive steps to strengthen and improve on § 404, then we have assured a future for the nation which holds fewer and fewer wetlands.

Despite disingenuous arguments from groups such as the American Farm Bureau that the nation's wetlands resources are actually increasing, it is abundantly clear that the nation continues to lose these critical resources at a staggering rate. A 1990 FWS study found that, in the lower 48 states, more than half of the nation's original wetland acreage is now gone.¹¹ This translates to a loss in excess of 60 acres per hour—one acre per minute—in the 200 years since the 1780's. Some states' wetlands losses have been extreme. For example, California and Ohio have lost more than 90 percent of their original wetlands, and Iowa, Indiana and Illinois have lost 89 percent, 87 percent, and 85 percent, respectively. Ten states have lost 70 percent or more of their original wetland acreage. The serious erosion of our national wetlands inventory is underscored by the fact that 22 states have now lost more than 50% of their original wetlands.

Wetlands losses in states of Members of this Subcommittee are no exception to this rule. As graphically illustrated on the following pages, four states [Connecticut, Idaho, Pennsylvania and Nevada] have lost in excess of 50 percent of their original

¹⁰ *Waterfowl Tomorrow*. 1964. Bureau of Sport Fisheries and Wildlife. Washington, DC. 770 pages.

¹¹ Dahl, T.E. 1990. *Wetland losses in the United States 1780's to 1980's*. U.S. Dept of the Interior, Fish and Wildlife Service, Washington, DC. 13 pp. Hereinafter, "1990 FWS Report."

wetlands and all but one state [Maine] has lost at least 25 percent of their original wetlands. With these losses go the tremendous wetlands functions and values discussed above. Whether it is. The valuable fish and shellfish nursery grounds in Connecticut, Florida, Maine, New Jersey, Rhode Island, or Virginia, critical flood control in Iowa or Minnesota, or important fish and wildlife recreational opportunities in Idaho, Vermont, or Wyoming, the unabated loss of wetlands in these states is taking its toll on their economies, their residents, and their residents' quality of life. As the 1990 FWS report starkly concludes,

... These data on the Nation's wetlands loss provide a clear indication that continued loss will jeopardize a valuable resource. Over a 200-year timespan, wet land acreage has diminished to the point where environmental and even socio-economic benefits [i.e., groundwater supply and water quality, shoreline erosion, floodwater storage and trapping of sediments, and climatic changes] are now seriously threatened."¹²

In addition to the 1990 FWS Report, the FWS released another major wetlands study in 1991 entitled *Status and Trends of Wetlands in the Conterminous United States*. This report confirms that the Nation's wetland hemorrhage continues, with the primary cause of wetlands destruction still conversion to agricultural land uses. Some of the findings of the report include the following:

- During the nine year study period, the nation had a net loss of 2.6 million wetland acres. This translates to an average annual net loss of approximately 290,000 acres, which is about two-thirds of the loss rates measured from the 1950's to the 1970's.
- More than 3 million acres of freshwater wetlands were lost during the study period. These losses represent the vast majority [98%] of wetland losses documented between the 1970's and 1980's.
- Estuarine wetlands declined by 70,000 acres, primarily in the Gulf Coast States, due largely to the shifting of emergent wetlands to open salt water.
- Although wetlands losses attributable to agricultural conversions declined from the previous study period, these losses still represent the majority [54%] of wetland losses in the U.S. Importantly, conversions to "other" land uses accounted for more than 40% of the total losses documented. Depending on how this category—which describes wetlands cleared and drained but not yet put to an identifiable use—is treated, the percentage of wetlands lost to agricultural conversion could be much greater than reported.¹³

Fortunately, a wake up call has sounded and the Nation is beginning to comprehend the enormity and gravity of the wetlands crisis. As a result, Congress has begun taking positive—albeit limited—steps to begin stemming the tide of wetlands loss. The 101st Congress enacted several wetlands laws that included new wetlands protection provisions of the Food, Agriculture, Conservation and Trade Act of 1990, provided for funding of wetlands conservation projects pursuant to the North American Wetlands Conservation Act ["NAWCA"], and established the Coastal Wetlands Restoration and Protection Act to begin combating runaway coastal wetlands losses in Louisiana and in other states. These newly-enacted laws provide the Nation with considerable new spending authorities for wetlands protection and—if fully funded—will bring important new resources to bear on the wetlands crisis.

While these efforts are both meritorious and ambitious, they alone cannot get the job done. Fiscal limitations and simple disregard for the functions and values of wetlands preclude a nonregulatory program—one reliant on acquisition, easements, tax breaks and other fiscal subsidies—from ever stemming the tide of wetlands losses. Thus, programs such as the NAWCA are doomed unless the Nation has a strong, complementary regulatory program that redirects development out of wetlands and restricts the conversion and destruction of yet more wetlands to development. Federal non-regulatory programs to purchase and restore wetlands must be complemented by real restrictions which protect the functions and values of wetlands that accrue to the public at large. We simply cannot "maintain and restore the chemical, physical, and biological integrity of the Nation's waters" without a combination of strong regulatory programs and ambitious acquisition and restoration efforts.

Therefore, an effective and vigorous § 404 program is essential for protecting wetlands and other waters of the United States. To achieve a strengthened and im-

¹² 1990 FWS Report.

¹³ For example, there is reason to speculate that runoff of the "other" wetland areas were cleared and drained for agricultural purposes but, because of economic or other factors, have not yet been planted to crops.

proved § 404 program, we must maintain the key components of the existing program, make minor adjustments to the current program to ensure it operates smoothly, and—most importantly—strengthen the program to surmount its serious deficiencies that continue to allow the destruction of wetlands and other aquatic systems.

The National Wildlife Federation Wetlands Agenda

Because of the critical ecological function wetlands play in the hydrological cycle, their protection is critical for meeting the Clean Water Act goal “to protect and maintain the chemical, physical, and biological integrity of our nation’s waters.” It is for precisely this reason that the Subcommittee should adopt policies to strengthen and expand protection of the nation’s wetlands resources.

In the past, implementation of the § 404 program has been plagued with institutional and administrative problems which have frustrated the regulated community and the environmental community, while allowing our wetlands base to continue to erode. Although these problems must be remedied, wholesale changes to the program is not the answer. Instead we must work within the existing framework and fine tune the process.

Most of the criticism of § 404 does not involve major programmatic deficiencies but instead focuses on delayed delineations and ambiguous-permitting expectations. Some landowners reportedly have experienced long delays in receiving delineations from the Corps District offices. Other applicants claim to have received inaccurate delineations that were conducted by poorly-trained consultants. And, partly as a result of misinformation generated and circulated by the regulated community and other opponents of § 404, still others remain confused by the program’s content and scope.

A number of environmental groups, including NWF, have shared many of the same frustrations in obtaining timely answers and dependable information from Corps and EPA personnel. Therefore, we urge this Subcommittee to explore our recommendations to provide timely resolution to these problems. Many of the recommendations are included in S. 1195, the “Wetlands Reform Act,” introduced by Senator Barbara Boxer. The NWF strongly supports S. 1195, and urges its inclusion in the Clean Water Act reauthorization.

Our specific recommendations are as follows:

- Expand CWA § 404 to cover drainage, dredging, flooding, clearing, channelizing, placement of piling-supported structures, and other significant physical wetlands alterations, regardless of whether any of these activities entail a discharge of dredge or fill material. The NWF, and more recently the National Wetlands Policy Forum, recognized that the nation cannot seriously address the problem of wetlands loss without the ability to control all major forms of physical wetlands alteration—not just discharges of dredged or fill material as provided under the existing § 404 program. The current rate of wetlands loss is a stark reminder that many activities that destroy wetlands often go completely unregulated by § 404 and other state and federal programs, and continue unabated. We strongly recommend that the Subcommittee amend § 404 to cover these other forms of alterations. Expanding the scope of regulated activities would offer greater protection to wetlands, and it would actually help decrease much of the uncertainty associated with the program. Partly due to lack of clear direction, the Corps has historically made overly narrow and often inconsistent interpretations of what constitutes a discharge of dredged or fill material requiring a § 404 permit. As a result, activities such as ditching, stream channelization, and clearing and bulldozing of wetlands vegetation have been inconsistently regulated, and a lot of time and resources have been expended by the regulatory agencies, the regulated public, and environmentalists debating this problem. Expansion of § 404 to explicitly cover all major physical alterations of wetlands is necessary to fully protect wetlands and to eliminate this source of uncertainty and needless resource drain.
- The Corps should continue to administer the § 404 program with EPA oversight. In the past, the Corps’ weak implementation and enforcement of the § 404 has been a liability to achieving the goals of the CWA and the overall effectiveness of protecting wetlands under § 404. Recently, however, the Corps and EPA have begun working together to better solve longstanding problems with the § 404 program. These initiatives include the establishment of the Wetlands Mitigation Memorandum of Agreement and the proposed rule to close the loophole for “de minimis” discharges. Both of these initiatives demonstrate to us that

the program can run smoothly while maintaining dual agency oversight. But if the status quo is to be changed by vesting the § 404 program in one agency, administration of the program should go to EPA, not the Corps because EPA is the author of the § 404 (b) (1) guidelines and EPA is charged with administration of the Clean Water Act.

- Explicitly include wetlands in the Clean Water Act goal statement. Although an explicit wetlands protection goal does not currently exist in the Clean Water Act, wetlands are an essential component of the waters of the United States, of § 404, and of other CWA provisions. We, therefore, recommend amending the CWA goal section to include explicit reference to wetlands to ensure that all relevant provisions of the CWA contribute to wetlands protection.
- Strengthen the general permit program. The Corps' general permit program, particularly, Nationwide Permit 26, sanctions the unreviewed and unmitigated loss of thousands of wet land acres annually. Furthermore, inadequate public involvement in overseeing this program seriously weakens its implementation and does nothing but expedite wetlands losses. Therefore, we recommend amending § 404 to (1) require general permits to include adequate measures to track activities conducted pursuant to general permits; (2) forbid authorizing activities under general permits for which states have denied § 401 water quality certification; and (3) provide the public and state and federal resource agencies with predischARGE notifications and an opportunity to comment before activities are undertaken pursuant to general permits. Section 404(e) should be amended to require that each Corps district prepare reports documenting each activity and the amount of acreage affected that is authorized by each general permit and to require that the Corps submit a biennial report to Congress of cumulative impacts to wetlands and other aquatic areas under each general permit.
- Strengthen the role of Fish and Wildlife Service and the National Marine Fisheries Service in § 404 permit decisions. Currently, the Clean Water Act and the Fish and Wildlife Coordination Act require the Corps to consult with the FWS and National Marine Fisheries Service (NMFS) on all § 404 permits. Although these resource agencies can recommend that modifications be made to the permits, the Corps can, and frequently does, ignore these comments. Therefore, we recommend amending § 404 to require the Corps to provide written explanation of its reasons for rejecting FWS or NMFS comments and to explain how the Corps' permit determination is consistent with the purposes of the Clean Water Act and the § 404(b)(1) guidelines.
- Earmark § 404 enforcement penalties for § 404 implementation. Historically, the Corps' and EPA's § 404 implementation programs have been severely underfunded. To make available additional resources over and above appropriated monies from general revenues, we recommend amending § 404 to establish an account into which § 404 enforcement penalties would be deposited for use by the EPA and Corps for § 404 program implementation.
- Modify § 404 state water quality certification requirements to better protect aquatic ecosystems. While § 401 certification requirements are generally required from states before a § 404 permit is issued by the Corps, questions have arisen over whether the requirement applies to Federal Energy Regulatory Commission licensing and whether states can or must—include narrative standards to protect wetlands and other aquatic habitats from degradation. Therefore, we recommend amending § 404 to expressly broaden the protections provided by § 401 and direct states to address physical and biological alterations of aquatic areas, as well as chemical pollution of those waters.
- Legislate EPA's definition of "fill material." For years the Corps and EPA have been at odds over the regulatory definition of "fill material." The result has been massive confusion and both agencies shirking the regulation of discharges of a number of materials that destroy wetlands [e.g., waste tires and mine tailings]. For this reason, we recommend amending § 404 to legislate EPA's definition of fill as any material which has the effect of replacing an aquatic area with dry land or of changing the bottom elevation of a waterbody.
- Strengthen the CWA citizen suit provision (§ 505) to provide for stronger wetlands protection by private citizens. Given the paucity of agency enforcement resources, vigilant private enforcement of § 404 is critical to protecting the nation's wetlands. One reform which should be made is to clearly provide that § 505 applies to § 404 violations. Section 505 should also be amended to encourage courts to overcome their reluctance to impose restoration requirements in cases in which restoration of degraded wetlands is both practical and desirable.
- Make the § 404 program more efficient by adopting a fast track provision for minor permits. Special priority should be given to minor permit applications

(*e.g.*, permits for activities that would disturb no more than 1 acre of wetlands) to ensure that they are processed within 60 days. Section 404(q) should be amended to require the Corps to allocate sufficient personnel to expedite minor permit applications in this fashion.

We urge the Subcommittee—and Congress—to step back from the controversies and reaffirm the critical role that the § 404 program plays in attaining the central goal of the Clean Water Act—to restore and maintain the integrity of the Nation's waters. We also urge the Subcommittee to assist our efforts in securing and applying more resources to § 404 wetlands delineations, mapping, outreach and education, and to the program in general, and thereby make its value and importance more understandable to everyone. Finally, we urge Congress to support the nation's burgeoning interest in protecting wetlands by expanding the reach of regulated activities under § 404 and by incorporating the additional strengthening amendments highlighted above. These are progressive and necessary changes if we are ever to achieve the goals of the CWA and end the long history of wetlands loss in this nation.

Pending Legislation

The NWF commends Senators Boxer, Baucus, and Chafee for their efforts, through the introduction of legislation, to resolve the extremely controversial and difficult issue of wetlands protection. We look forward to working closely with you, the Subcommittee, and the full Environment and Public Works Committee to craft legislation as part of the Clean Water Act reauthorization that will finally bring a halt to the continued destruction of this nation's wetlands.

S. 1195 and H.R. 350, "The Wetlands Reform Act"

NWF strongly supports S. 1195, the "Wetlands Reform Act," introduced by Senator Barbara Boxer on July 1, 1993. This bill, identical in content to H.R. 350 introduced by Representative Don Edwards (D-CA), presents a balanced solution to the wetlands issue. Importantly, S. 1195 would finally close the existing loopholes in section 404 of the Clean Water Act, by specifically regulating most activities that impact wetlands, not just the deposition of dredge and fill material. S. 1195 is a balanced bill in that it also addresses the concerns of the regulated community. It finally puts in place through legislation existing exemptions for the agricultural community. Furthermore, the agricultural and developmental communities' concerns regarding permitting delays are specifically addressed by a new expedited permitting procedure, requiring the processing of small-scale permits within 60 days. Complementing the regulatory program, S. 1195 provides tax incentives to encourage voluntary wetlands conservation, as well.

S. 1304, "Wetlands Conservation and Regulatory Improvements Act"

NWF appreciates the efforts of Senators Max Baucus (D-MT) and John Chafee (R-RI) in their attempt to craft a bill intended to bring all parties to the table and finally resolve this issue. Broader in scope than S. 1195, their bill addresses a number of additional issues, many of which are controversial.

There are many components of S. 1304 which the NWF supports. Importantly, S. 1304 finally confirms that the scope of regulated activities includes many activities, such as ditching, draining, and channelization, which the Army Corps of Engineers has failed to regulate. S. 1304 would provide a landowner assistance program to help small landowners with delineation of wetlands on their property. It requires the Corps to monitor its general permit program. Currently, the Corps is unable to adequately track this program to determine the real impact that general permits have on wetland habitats. S. 1304 initiates an appeals process for permitting decisions. This would allow landowners to appeal permitting decisions without having to resort to the judicial system as the only means of appealing decisions. Importantly and unlike the Clinton administration's recent proposal, S. 1304 provides a balanced process by also allowing any party involved in the permit process to appeal permit issuances as well as permit denials. Finally, we support the bill's adoption of the Environmental Protection Agency's definition of fill material. It is critical that these provisions be retained in the final version of the bill.

NWF strongly recommends strengthening amendments regarding other aspects of S. 1304. In the absence of these amendments, the NWF cannot support the bill. In particular, we are concerned about the practicality of the watershed planning process, and the use of this process to encourage local and regional general permits. While we support the concept of watershed management planning if implemented in a manner that compliments and strengthens the federal wetlands program, we are concerned that the past failure of this concept, coupled with the delegation of

the wetlands protection program to state and local entities, would fragment federal conservation authority and enforcement, resulting in less wetlands protection and accelerated wetlands loss. We oppose delegation to local authorities and all federal financial incentives for state and local assumption. NWF is also concerned that even large projects, and those with a high potential impact on the wetlands resource, would be able to obtain an expedited permit (60 days) if the project is within an area with an approved watershed management plan. These projects should instead be subject to a complete scientific analysis, public review, and comment process. We also oppose language codifying the prior-converted wetlands exemptions. These wetlands, comprising 54 million acres, still serve important wetland functions and should not be exempted from protection under the Clean Water Act.

Senators Baucus and Chafee have long been important leaders in wetlands conservation and their bill, S. 1304, is an important starting point towards improving wetlands conservation. We look forward to working with you to strengthen this bill to maintain and restore America's wetlands.

H.R. 1330, "The Comprehensive Wetlands Conservation and Management Act of 1993"

NWF strongly opposes H.R. 1330 and believes it would be more appropriately titled "The Comprehensive Wetlands Destruction Act of 1993." H.R. 1330, introduced by Representative Jimmy Hayes (DLA), is designed to weaken and in some cases eliminate federal protection of wetlands in this country. The bill completely rewrites section 404 (§ 404) of the Clean Water Act (CWA), and disregards the 20 years of experience the agencies have acquired during its implementation. If H.R. 1330 is enacted, § 404 would be rebuilt from scratch to develop a completely new regulatory program, creating years of confusion for wetlands regulators and the regulated community.

Almost too numerous to list, the faults of H.R. 1330 are many and we completely oppose it. H.R. 1330 would eliminate the role of the EPA in § 404 permit review, despite their importance in overseeing the program and expertise in environmental protection. It would establish a policy of "wetland triage" by ranking wetlands into high, medium and low value categories with the later two categories receiving little or no protection. This completely fails to recognize the natural diversity of functions which wetlands provide, by essentially setting up an arbitrary system of comparing apples and oranges and then determining that one is more important than the other. H.R. 1330 would also narrow the current scientific definition of wetlands, replace it with an arbitrary and politically-motivated standard, thereby removing half of the nation's wetlands acres from any protection under the Clean Water Act's wetlands protection program. The bill imposes new and significant financial liabilities which would bankrupt the federal treasury by requiring federal acquisition, at the discretion of the landowner, of so-called "high value" wetlands. A conservative estimate by the GAO suggests a \$10-\$15 billion cost for the land acquisition components alone, of H.R. 1330. Furthermore, this is completely unnecessary in light of the constitutional protection already provided. In short, H.R. 1330 converts the existing § 404 regulatory program to little more than a costly "rubber stamping" program for issuing wetlands destruction permits. This bill is a disaster for wetlands, and would be a disaster for America.

The Clinton Administration Wetlands policy—"protecting America's Wetlands, A Fair and Flexible Approach"

The Clinton Administration's attempt to devise a sound and manageable wetlands protection policy falls short of the mark. While it does improve some aspects of federal wetlands policy, overall the proposal represents a "net-loss" for wetlands, and must be strengthened to truly protect and rebuild the nation's wetlands resources. NWF is in the process of thoroughly reviewing and critiquing the Administration's policy, and will provide a more detailed analysis for the hearing record within the next two weeks. However, it is important that we address certain aspects of its policy at this time.

NWF endorses the Administration's final rule closing the "ditching and draining" loophole in the U.S. Army Corps of Engineers regulations. Historically, many Corps of Engineers districts avoided regulating ditching, drainage and excavation in wetlands and other waters. The Corps based its failure to regulate these activities on the de minimis discharge exception in its permitting regulations. The exception created confusion and inconsistent treatment of regulated persons, while allowing the destruction of thousands of acres of wetlands. In 1990, the NWF filed suit under the Clean Water Act, challenging the unregulated drainage of hundreds of acres of valuable coastal-plain wetlands near Wilmington, N.C. In February, 1992 the Bush Ad-

ministration agreed to settle the lawsuit, primarily by proposing a change in Corps and EPA regulations to eliminate the de minimis loophole. The new ditching and draining rule stems from that agreement.

The NWF supports the Administration's withdrawal of the proposed Alaska One Percent rule. Due to the importance of this provision, enclosed in this testimony is a complete section devoted to the issue of Alaska's wetlands.

The NWF is pleased with the Administration's endorsement of a broad-based effort to restore the nation's historic wetlands base. It is important that the Administration supports appropriations for expansion of the Wetlands Reserve Program and also supports other voluntary and cooperative efforts to restore wetlands on private lands. Finally, the NWF endorses the Administration's commitment to training federal wetlands delineators in order to increase the reliability and accessibility of wetlands delineations.

NWF is opposed to many other aspects of the Administration's plan. The Administration has adopted a rule that arbitrarily exempts as many as 54 million acres of agricultural wetlands from regulation. Under Swampbuster, wetlands that were drained or otherwise manipulated to enable a farmer to plant commodity crops, before December 23, 1985, are considered "prior-converted." Farmers can farm these wetlands as they did in natural conditions or as they did prior to December 23, 1985, without penalty. Despite being cropped, many prior-converted wetlands continue to provide flood control, pollution filtration, groundwater recharge, wildlife habitat, and other wetlands functions. According to the 1989 *Federal Manual for Identifying and Delineating Jurisdictional Wetlands*, these areas frequently meet the definition of "waters of the United States" and deserve full § 404 protection. Moreover, almost all prior-converted wetlands would revert to wetlands if farming was discontinued. Swampbuster specifically recognizes that prior converted wetlands can be "abandoned." The Administration's rulemaking allows these cropped wetlands to be converted to commercial, residential and other uses. A relatively benign Swampbuster classification becomes a blanket § 404 exemption authorizing the permanent destruction of all existing and latent wetlands functions and values.

The Administration also proposes to make the Department of Agriculture's Soil Conservation Service the lead agency for the purposes of wetlands delineations on agricultural land under Swampbuster and the CWA. Although it makes sense to use a single delineation for both wetlands programs, SCS is not the federal agency that should be making these important jurisdictional decisions. SCS has far less experience than EPA and the Corps in delineating wetlands. In fact, SCS has a dismal record of accurately delineating wetlands on farm land. In southwest Kansas, for instance, SCS found only three wetlands in a seven county area that were subject to Swampbuster. These counties are part of the playa lakes region, an area known to have tens of thousands of seasonal and temporary wetlands. SCS has since agreed to *redo* the delineations in southwest Kansas and any other part of the state where similar inventory errors were made.

The Administration supports the development of state watershed management plans that would incorporate state and local standards for wetlands protection. Although watershed management is a tool that could be used to complement and improve the § 404 program, the Administration's proposal is a way to dismantle the wetlands regulatory program. Under the guise of state watershed management, the Administration proposes to loosen wetlands restrictions by allowing local governments, and even private entities, to identify and rank wetlands, devise expedited procedures for wetland development, and establish mitigation banks to "compensate" for wetland destruction. The Administration also proposes to give "high priority" to developing programmatic general permits (PGPs) that will "defer" to state and local governments implementing approved watershed plans. These proposals will continue a Bush era policy of aggressively and illegally transferring 404 authority to state and local governments. However, state and local governments are subject to intense political pressure, and should not be entrusted with the management of America's wetlands.

The Administration's proposed administrative appeals process would provide wetland developers ready access to challenge Corps and EPA wetlands delineations and permit denials, but would "shut out" neighboring and downstream landowners and other concerned citizens when they attempt to challenge wetlands delineation and permit approvals. This lack of equal access to an administrative appeals process is unfair and skews wetlands decisions in favor of wetlands destruction.

Like the Bush administration, the Clinton Administration promotes the concept of wetlands categorization. Wetlands deemed to be of relatively little value would receive reduced protection under the section 404 program. This proposal would facilitate the destruction of thousands of acres of wetlands in urban areas of the country.

At the same time, the highly technical and resource intensive process of assessing wetland functions and values would divert resources desperately needed by the Corps and EPA for timely and accurate wetlands delineations, permitting and enforcement.

Finally, the Clinton plan endorses the concept of mitigation banking. In practice, however, the establishment of mitigation banks encourages the destruction of wetlands because it makes mitigation requirements easier to comply with. Moreover, creating wetlands through mitigation banks, in order to replace wetlands proposed for new development, is extremely difficult and fraught with risk and uncertainty. At a minimum, mitigation banking should be restricted to "restoration" of wetlands, and never used for simple "preservation."

Alaska's Wetlands

The protection of Alaska's wetlands is another critical, albeit emotionally-charged and controversial, issue that must be of high priority and central focus for this Subcommittee. As with so many other facets of the wetlands debate, there is no shortage of misinformation, distortion, and "horror stories" being generated by those who seek to relax protection for Alaska's wetlands. Due to the importance of Alaska's wetlands and the continuous threat they are under, it is important that we specifically address this issue.

Following, we provide an overview of the many important functions and values Alaska's wetlands provide our Nation, a discussion of the ecological and economic significance of these habitats to Americans and to the international community, and an overview of the threats to Alaska's wetlands. This is followed by an in-depth discussion and analysis of what the Alaska Natural Resource Center and many of our colleagues in the environmental community consider to be the single most important wetlands issue facing Alaska: the Bush Administration's proposal to wholesale exempt Alaska from the Section 404(b) (1) mitigation requirements, oftentimes referred to as the "One Percent Rule" or exemption. Although the Clinton Administration formally withdrew this ill-conceived proposal as a part of its 24 August 1993 announcement, and we commend them for this action and for recognizing the importance of Alaska's Wetlands, there will be considerable pressure from the Alaska delegation and others to breathe new legislative life into the One Percent Rule.

An Overview of the Resource At Stake

America's largest state is also its wettest. Almost half of Alaska—170 million acres—can be classified as wetlands. With nearly two-thirds of the Nation's wetlands within its borders, Alaska boasts many of the most diverse and critical wetland habitats on the continent. The State's coastal estuaries, saltwater lagoons, river corridors, marshes, muskegs, bogs and wet tundra all support an astounding variety of fish and wildlife species. In fact, no complex of natural systems has had a greater influence than Alaska's wetlands in shaping the State's economy.

Alaska's Fisheries

Alaska's wetlands sustain some of the world's richest commercial and sport fisheries. Because the maintenance of customary and traditional lifestyles is dependent upon fish and wildlife resources sustained by wetlands, 200 of the 209 remote villages in Alaska are located in, or near, wetland ecosystems.

For Alaskans, fish are one of the most important natural resources critically dependent on the State's wetlands. Freshwater wetlands provide essential spawning, feeding, rearing and over-wintering habitat for all five species of Pacific salmon found in Alaska as well as trout, whitefish, grayling and pike. Wetlands also provide a valuable source of inland and marine detritus to coastal estuaries, supporting shrimp, crab and other shellfish as well as a number of commercially-important marine fish species. Alaska's wetlands are essential in maintaining water quality in salmon spawning streams and rivers and in nearshore spawning and rearing areas for marine fish and shellfish.

In addition:

- The gross revenues from harvest of salmon in Alaska exceed \$500 million annually [ex-vessel]. Gross revenues to processors exceed \$1 billion annually. The salmon harvest alone involves nearly 17,000 licensed vessels, over 500 processors and buyers, and more than 70,000 jobs.
- The seafood industry is the largest private industry employer in Alaska, accounting for more than one quarter of all the personal income generated by private industry in Alaska.

- As a result of the economic activity generated by the harvesting, processing and marketing of fish, every major region of the state is directly or indirectly affected by the health of the commercial fishing industry.
- Sport fishing in Alaska sustains a significant service industry. Anglers pay for tackle, boats, moorage, transportation, lodging, food and beverages, guiding, and other fishing-related goods. Collectively, sport anglers' annual expenditures in Alaska result in gross business revenues of approximately \$350 million, 5,000 full-time jobs, and \$115 million in personal income.
- Gross revenues, jobs and personal income generated outside Alaska by sport fishing in the state equal or exceed those generated within the state due to importation of goods and payment for goods and services occurring outside the state.
- Almost two-thirds of the annual subsistence harvest is composed of fish and shellfish. Subsistence fishing supplies over 20 million pounds of food annually to rural areas in Alaska.
- Fish provide a major portion of the diet of rural Alaskans. In comparison to the average American who consumes about 13 pounds of fish per year, the average rural Alaskan consumes approximately 230 pounds of fish per year.

Alaska's Wildlife

Many of Alaska's wildlife species, including moose, brown bear, caribou, beaver, mink and otter are dependent on Alaska's wetlands during some, or all, of their life cycle. These wildlife resources sustain a significant segment of the State's economy.

Similar to sport fishing, hunting in Alaska supports a broadbased service industry. Hunters pay for guns, ammunition and other equipment, transportation, lodging, food and beverages, guides and guiding services, meat processing and other related goods and services. Hunter expenditures alone contribute \$82 million annually in gross revenues to Alaska businesses.

In addition:

- Conservative estimates of the nonconsumptive values of Alaska's wildlife include over one-fourth of the \$400 million spent annually by tourists in the State. Aesthetically and biologically, wetlands generate a large portion of this revenue.
- Alaska's wetlands provide nesting, rearing and staging habitats for millions of waterfowl and shorebirds important to hunters and birdwatchers throughout the Nation. For example:
- Thirty-four species of waterfowl nest in Alaska's wetlands, including eight species that nest nowhere else in the United States.
- Eighty percent of the world's Trumpeter Swans and 50 percent of all Tundra Swans nest in Alaska's wetlands.
- Ten million ducks, 750,000 geese and 80,000 swans migrate annually from nesting grounds in Alaska to wintering areas in the lower 48 states, Canada, Mexico, and Asia. Another two million ducks and 300,000 geese depend upon Alaska's wetlands for critical staging areas.
- Alaska's wetlands support up to 60 percent of North America's Northern Pintail ducks, 25 percent of Wigeon, and nearly 20 percent of Scaup and Canvasbacks.
- Seventeen percent of all geese and 11 percent of all ducks harvested in North America are reared in Alaska's wetlands.

Finally, Alaska's wildlife comprise a significant component of the subsistence economies of the State's rural villages. Of the estimated 35 to 45 million pounds of food harvested annually by subsistence users, approximately 18 percent is land mammals [primarily wetlands-dependent species such as moose and beaver] and nearly eight percent includes waterfowl and wild plants. The remainder of the harvest includes fish, shellfish and marine mammals.

Alaska Wetlands Are At Risk

Despite their vastness, their critical role in supporting abundant fish and wildlife populations, and the significant contribution they make to the State's economy, Alaska's wetlands are at risk. Development and urban expansion threaten America's last remaining stronghold of expansive wetland ecosystems. In carrying out their aggressive attack on Alaska's wetlands, pro-development forces have tried to cleverly use the argument that, because Alaska's wetlands are more abundant than wetlands in the Continental United States, the regulations protecting them are unnecessary and far too stringent.

The truth is that, while Alaska's wetlands acreage is indeed vast, many critical wetland habitats are extremely limited in extent. For example, Alaska's coastal salt marshes—literally the cradle of an array of economically-important fish and shellfish species—comprise only 345,000 acres and are especially vulnerable because most of Alaska's urban development occurs in coastal areas. Despite blanket statements that Alaska is up to its ears in wetlands, losses in some parts of the State have been dramatic. For example, nearly 60 percent of Anchorage's original wetlands base and 30 percent of Juneau's Mendenhall Valley have been destroyed by development. These losses, in fact, exceed the national average.

Efforts to Legislatively Exempt Alaska from Wetlands Mitigation Sequencing [The "One Percent Rule"] Must Be Soundly Rejected

The NWF and numerous other national and local conservation and environmental organizations strenuously oppose revising the Clean Water's Act's Section 404(b)(1) guidelines to exempt Alaska from mitigation sequencing. Although the Administration formally withdrew from consideration the EPA proposal [57 Federal Register at 52716], we have every reason to expect that an aggressive effort will be made to seek a legislative remedy to this misperceived problem.

The Alaska One Percent Rule was proposed by the Bush Administration on the eve of the general election and was driven by politics, not science. The EPA has provided little evidence supporting the "assumptions" underlying this ill-conceived proposal and—in fact—are contradicted by the agency's own experts as well as those from other resource agencies who dispute the need to grant an exemption to Alaska.

As proposed, EPA would have provided a blanket exemption to oil interests and developers in Alaska to disregard cost-effective alternatives to wetlands destruction and avoid the requirement, applicable in every other state, that wetlands destruction be offset by compensatory mitigation. At a time when the Nation is striving for no net loss of wetlands it is inconceivable that the EPA would have granted the opening up of 1.7 million acres of Alaska's wetlands—an area larger than the state of Delaware—to development.

The proposed exemption would have unacceptable adverse effects on the environment.

The objective of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." In fact, the EPA has explicitly singled out wetlands as a resource especially deserving of protection [see, e.g., 40. C.F.R. § 230.1(d)]. Special treatment for Alaska would strip protection from these "special aquatic sites" and, in so doing, flatly ignore the national and international importance of Alaska wetlands to fish, waterfowl, shorebirds, and marine and terrestrial mammals. Even the EPA's own experts in its Regional Office, and those of the U.S. Fish and Wildlife Service, have articulated compellingly that the loss of millions of acres of Alaskan wetland habitat as a result of the One Percent exemption would cause irreparable harm to the fish and wildlife populations that depend on these aquatic ecosystems.

The proposal to exempt Alaska wetlands from mitigation sequencing under section 404 would have severe negative environmental effects and, from a resource perspective, would actually undermine the objective of the Clean Water Act to preserve the waters of the United States.

The proposed exemption would have unacceptable adverse effects on the economy of the State of Alaska.

As discussed at length above, the wetlands of Alaska are a keystone to the State's economy. Thus, anything to erode or diminish the State's wetlands base will also diminish the health of its economy. This is because the State's commercial and recreational sport fisheries—which employ thousands of people and generate billions of dollars annually—would be put at risk by the exemption.

For example, the wetlands most critical to Alaska's fisheries and subsistence economies are also among its scarcest. According to the government, only 345,000 acres of the State's wetlands are vegetated estuarine or intertidal wetlands. These are precisely the rare and productive coastal wetlands that are the most vulnerable to urban growth and development. Thus, loss of one percent of the State's wetlands, as has been proposed, could entirely eliminate Alaska's coastal wetlands and the enormous and sustainable economic benefits they provide.

In summary, withholding full Clean Water Act protection from millions of acres of Alaska wetlands will have a negative impact on the functions and values of those systems. Because the Alaska economy relies, in substantial part, on the health of its wetlands, the economy would unquestionably suffer as well. In its barest form,

adopting the One Percent Rule would be an economic and an environmental disaster.

The premises underlying the proposed exemption are not supported by the evidence.

The chief premise of the One Percent Rule is that the section 404 program, generally, and the Section 404(b)(1) guidelines, specifically, are unacceptably rigid and burdensome to the regulated community operating in the state of Alaska. Thus, it is lamely argued that an across-the-board Alaska wetlands exemption is an appropriate remedy because [1] there is lack of practicable alternatives to developing in wetlands and [2] opportunities to perform wetlands compensatory mitigation in Alaska are extremely limited.

The NWF tested the underlying premise of the proposed exemption and its assumptions in respect to mitigation sequencing by serving Freedom of Information ["FOIA"] Requests on the Corps and the EPA. In evaluating the issue of unacceptably rigid and burdensome requirements, we requested, reviewed and analyzed documents establishing the implementation record of section 404 in Alaska during the past 20 years and all records justifying EPA's decision to protect wetlands in Alaska less stringently than in other states. The agencies' responses to our requests were striking and, by almost any standard, demonstrate beyond a doubt that the existing guidelines are already extraordinarily flexible and that the section 404 program is not an unreasonable impediment to wetlands development in Alaska.

In its request, NWF obtained all records indicating the number of section 404 permits processed, approved, and denied in Alaska in the 20 years since 1972. We also requested all records reflecting the number of occasions in which compensatory mitigation was required by the Corps. According to the government's own records, of the 3,997 individual permits processed by the Corps between 1 January 1972 and 15 October 1992, only 108 [2.7%] were denied. Of the 3,017 individual section 404 permits authorized by the Corps during that time, only 15 [0.5%] were conditioned on compensatory mitigation. Clearly, the Corps' records do not support the premise that the Section 404(b)(1) guidelines are unduly rigid in Alaska and require weakening. If anything, these data suggest the guidelines have proven too flexible to accomplish the important task of protecting the Nation's waters.

With respect to the second issue, that there is a lack of available upland sites for development, NWF submitted a FOIA requesting of EPA all records indicating that lack of available uplands sites has prevented development in Alaska. The EPA was unable to produce a single responsive document and—in fact—the agency actually produced four documents demonstrating quite the opposite, that "lack of available upland sites has not limited or prevented" development in the State. The contention that in many cases there are no practicable alternatives for development in Alaska except in wetlands is apparently an opinion with little basis in fact.

In a similar vein, EPA produced only slightly more evidence that compensatory mitigation is not feasible in Alaska because of technical difficulties and a lack of restoration sites. Our analysis of this issue is beyond the scope of this statement and can be read in the attached comments, but suffice it to say that the government has provided little hard evidence to demonstrate compellingly that developers are unable to compensate for wetland losses in Alaska.

In conclusion, although the proponents of the One Percent Rule argue that the section 404 program has been too restrictive in Alaska, that there are limited practicable alternatives, and that mitigation sequencing is impracticable, a thorough review of the administrative record compels the conclusion that these tenets are unfounded and largely without merit.

NWF Position on Alaska Wetlands

For the aforementioned reasons, NWF vigorously opposes the exemption of Alaska from the mitigation sequencing provisions of the Section 404(b)(1) guidelines. Our independent analysis of records from the Army Corps of Engineers plainly demonstrate that the section 404 program has been no more burdensome to the regulated community in Alaska than in any other state. However, should questions or uncertainties still remain concerning the application of section 404 in Alaska—particularly as it relates to permitting and compensatory mitigation—then we urge the commissioning of a Government Accounting Office investigation to develop whatever additional information might be warranted on Alaska wetlands and the section 404 regulatory program.

The flexibility already built into the Section 404(b)(1) guidelines has easily accommodated the "unique" Alaska circumstance of pristine and abundant wetlands. The Alaska Exemption would take an already flexible program and convert it into a giveaway. Adoption of the proposal by Congress would not only permit developers to

fill wetlands even when there are convenient upland alternatives, but as well ignore obvious opportunities for compensatory mitigation. The result would be the unmitigated loss of 1.7 million acres of Alaska's wetlands. This proposal simply cannot be justified, and we urge the subcommittee and the Senate to soundly reject efforts to legislate an Alaska One Percent Rule.

Summary and Conclusion

Wetlands provide many critical ecological functions and values that are of enormous benefit to all sectors of society. Those values and functions include: flood conveyance; storm surge abatement; water quality maintenance; habitat for endangered and threatened species and other wildlife; fish and shellfish habitat; recreational opportunities; water supply; food production; timber production; historic and archaeological sites; education and research areas; and open space and aesthetics.

Despite the economic, ecological, and sociological benefits of wetlands, wetlands have been destroyed throughout our history, and they continue to disappear today at an alarming rate. While defenders of the ongoing destruction of the nation's wetlands often cite narrow "economic" arguments to support their positions, any sound analysis of the wetlands regulatory protection program must include the broad ecological, economic, and social ramifications of further reducing America's valuable wetlands resource.

S. 1195 and H.R. 350 (The Wetlands Reform Act), introduced by Senator Barbara Boxer (D-CA) and Representative Don Edwards (D-CA) respectively, offer a balanced solution to the problem of wetlands protection that is flexible and fair. In contrast, S. 1330 (The Comprehensive Wetlands Conservation and Management Act of 1993), introduced by Jimmy Hayes (D-LA), is clearly designed to weaken or eliminate federal protection of wetlands. In light of the many important benefits that wetlands provide, any bill that would accentuate the decline and destruction of wetlands ecosystems must be disregarded as economic and ecological folly. The NWF appreciates the work of Senators Max Baucus (D-MT) and John Chafee (R-RI) in drafting S. 1304 (The Wetlands Conservation and Regulatory Improvements Act), but without significant improvements, such as those outlined herein, this bill too, fails in its mission to protect our wetlands heritage. Going beyond S. 1304, the Clinton Administration plan is fatally flawed. In exempting 54 million acres of prior-converted wetlands, proposing a one-sided permit appeals process, and endorsing the concepts of wetlands categorization and mitigation banking, the Administration has "balanced" wetlands right out of the policy equation.

With the reauthorization of the Clean Water Act this year, Congress can send an important message—that we will no longer tolerate the annual loss of nearly 300,000 irreplaceable acres of wetlands. Each day of inaction only exacerbates the problems we face today: polluted drinking water for our families, flood damage to our homes, collapsing commercial and recreational fisheries, and—perhaps most devastating—a downward spiral of biodiversity.

The time has come to pass a strong, effective national wetlands protection policy that has an explicit goal of protecting wetlands. We have allowed, indeed, encouraged, the destruction of more than half of the nation's heritage of wetlands. We now understand what has been lost and the values of the natural wetlands that remain untouched. We must not, in the name of political expediency, ignore the dismal consequences of continued wetlands loss to our nation's ecological and economic health.

Congress must take a leadership role, casting aside specious arguments, false horror stories, and political pressures, to rechart this nation's existing course of wetlands destruction. The course is clear and it remains only for a resolve to be translated into action.

TABLE 1: Anglers, days spent fishing, and expenditures in 1991 in states represented by Members of the Clean Water, Fisheries, and Wildlife Subcommittee

State	Anglers	Days Fishing	Expenditures
Connecticut	345,000	4,473,000	\$ 252,997,000
Florida	2,677,000	36,528,000	\$1,654,594,000
Idaho	365,000	2,878,000	\$ 145,456,000
Maine	449,000	4,552,000	\$ 177,931,000
Minnesota	1,450,000	17,701,000	\$ 846,246,000
Nevada	171,000	1,181,000	\$ 80,123,000
New Jersey	963,000	11,718,000	\$ 774,375,000
North Carolina	1,481,000	15,909,000	\$ 577,546,000
Pennsylvania	1,397,000	23,849,000	\$ 677,152,000
Rhode Island	171,000	2,056,000	\$ 63,523,000

Source: U.S. Fish and Wildlife Service, 1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation.

TABLE 2. Wetland Losses in Selected States

State	Wetland Acres		% Loss
	1780's	1980's	
Connecticut	670,000	172,500	74%
Florida	20,325,013	11,038,300	46%
Idaho	877,000	385,700	56%
Maine	6,460,000	5,199,200	20%
Nevada	487,350	236,350	52%
New Jersey	1,500,000	915,960	39%
North Carolina	11,089,500	5,689,500	49%
Pennsylvania	1,127,000	499,014	56%
Rhode Island	102,690	65,154	37%

Source: Dahl, T.E. 1990. Wetlands Losses in the United States 1780's to 1980's. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 13 pp.

**REMARKS OF THE FOUNDATION
FOR ENVIRONMENTAL AND ECONOMIC
PROGRESS BEFORE THE ENVIRONMENT
AND PUBLIC WORKS COMMITTEE
OF THE UNITED STATES SENATE**

SEPTEMBER 15, 1993

**Presented by
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Foundation for Environmental
and Economic Progress
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INTRODUCTION

Mr. Chairman, Members of the Committee:

I am appearing before you today in my capacity as President of the Foundation for Environmental and Economic Progress, a coalition of large landowners and community developers which, while small in number, is nonetheless significant in the diversity and magnitude of their collective real estate holdings. The member companies have projects in 44 states in the United States. We share in common the ownership of large tracts of developed and undeveloped land for which there exists both a long-term commitment to develop and significant capital investment. Among the members are Newhall Land and Farming; Del Webb Corporation; Cargill, Inc.; Westinghouse Communities; Mobil Land and Development Company; Arvida Company; the Woodlands Company; Westvaco Company; and the Newland Group.

As I come before you today, it is acknowledged by all that wetlands and their functions are vital to a balanced ecological system and, as such, careful attention needs to be given not only to existing wetland areas but to the potential for enhancing, restoring and creating new wetland areas. Both Congress and the President are to be applauded for their movement into this arena, but it is extremely important that you and the President be bold as you collectively address the various competing interests and different policy choices confronting you in the wetlands arena. The failure to participate in this process in a meaningful way assures that there will be continued regulatory and judicial expansion of the program. Nowhere is this more evident than in the Final Rule proposed to settle the case of *North Carolina Wildlife Federation v. Tulloch*, Civil No. C90-713-CTV-5-BO (E.D.N.C. 1992). Here is a clear attempt by the

regulatory bureaucracy to expand the definition of "discharge" to include excavation, i.e., activities whose essential nature is removal of material from waters, not addition of material to waters. The Federal government is now attempting to regulate activities that affect wetlands by improperly using incidental soil movement as a jurisdictional "hook."

Let me be clear. The Foundation believes it entirely appropriate to expand the scope of activities regulated in a wetland, but for the Administration to suggest that Congress should amend the Clean Water Act to make it consistent with this rulemaking has the cart before the horse. Congress must decide; then agencies can adopt rules to implement that direction -- not the other way around. Without Congressional sanction, this program will ultimately lack political legitimacy and, if that occurs, the very proper goal of effective resource management will be undermined, as will the credibility of the program itself.

The direction suggested both by Senate Bill 1304 and by the President's policy initiative of August 24, 1993, moves in the right direction, but both fail to address several important issues. My focus is to highlight for you those areas where progress has been made as well as those where more remains to be done. We do so in the belief that the fundamental objective of the wetlands regulatory program is to provide a series of procedures and protocols that allow for the effective management and conservation of the resource but not at the sacrifice of the economic engine of this country and, in particular, the component part of that engine that is represented by the land development industry. What we believe is needed is a balance; one which rationalizes through creative planning the usefulness of selected portions of our wetland resources while excluding or severely restricting access to others.

NO NET LOSS

The President has articulated and we support the goal of "no overall net loss of the nation's remaining wetlands and the long-term goal of increasing the quality and quantity of the nation's wetlands resource base." While we acknowledge the validity of that goal, it is important to recognize that without fundamental change in the present 404 program, we do not believe it is possible to achieve the goal. The present 404 program, as it has been implemented by the Environmental Protection Agency and the Corps of Engineers, promotes a program that emphasizes strict and absolute protectionism as the preferred regulatory approach. This approach ignores two important concepts of the no net loss doctrine. First, the term "net" implies that there will necessarily be some losses to be offset by other kinds of gains. Second, the concept of "no net loss" has always been interpreted to mean no net loss of the "functions" and "values" of wetlands as opposed to the concept of no net loss of territory or land standing alone.

The President's policy remarks potentially leave open the question of whether or not no net loss is to be viewed as no net loss of function or value. We believe that the President's position, particularly when viewed in the context of the whole program, accepts the historical interpretation of no net loss, but we would urge both the Congress and the Administration to make that clear as they offer both legislative and regulatory guidance to the implementing agencies. The institutionalization of this concept is critical to the ability to increase the quality and quantity of the nation's wetlands resource.

**CONSOLIDATION OF WETLANDS ADMINISTRATION;
REGULATORY PROGRAMS MUST BE FAIR, FLEXIBLE
AND PREDICTABLE; DUPLICATION MUST BE AVOIDED**

An announced principle of the President's plan is that the regulatory program must be efficient, fair, flexible and predictable, and administered in a manner that avoids unnecessary impacts upon private property and the regulated public while providing effective protection for wetlands. Duplication among regulatory agencies must be avoided, and the public must have a clear understanding of regulatory requirements and various agency roles.

Substantially all of the efforts suggested by the President in implementing this particular aspect of his wetlands policy were directed toward the agricultural sector, with little relief being provided to the other portions of the regulated community. If we are serious about avoiding duplication and achieving a measure of efficiency, fairness, flexibility and predictability, then serious consideration must be given to consolidating the 404 program under one agency. The President, while not outright endorsing the concept, recognized the necessity for continuing to review this matter, for in the "Questions and Answers" distributed with the narrative of his plan, the President acknowledges that "the Administration will take steps to emphasize a single decision maker to streamline the various Federal wetlands programs and reduce duplication, overlap and delay . . ."

As each of you are aware, presently the Corps of Engineers is charged with the responsibility of issuing a permit, but the Environmental Protection Agency has the right to veto the permit or to elevate a permit decision for further review in Washington. The U.S. Fish and

Wildlife Service is a commenting agency which also has rights to request an elevation to Washington. Add to that additional layers of review in virtually every state, and it is not difficult to understand why consolidation at the Federal level should be addressed.

The tension that exists between the Corps of Engineers, the Environmental Protection Agency and the U.S. Fish and Wildlife Service results in an adversarial system in which the permit applicant is caught in the middle and is forced to engage in a process of shuttle diplomacy between the offices of these various agencies while he works the process through to completion. We have urged and would urge again that the Congress of the United States, give renewed consideration to consolidating the permitting process into one agency. Other agencies may, of course, be commenting agencies, but one agency should have the final authority to issue or deny the permit without having its paper graded by another agency at the same time. No one step would do more to promote efficiency, fairness, flexibility and predictability while at the same time eliminating much duplication of staff and expertise.

If this approach is politically impractical, then we would recommend a compromise that would allow the Environmental Protection Agency, if it certifies affected wetlands to be of national significance within 60 days of the filing of an application, to take over the permitting responsibility from the Corps for a particular permit application. Appropriate interagency guidance could be developed to more precisely define the criteria by which the EPA could take over a permit, but the intent is that it must be an application of major significance. If the EPA exercises its takeover authority, then it would have exclusive decision making power on the permit, and the Corps of Engineers would simply become a commenting agency for the balance

of the process. If, on the other hand, the EPA does not exercise its takeover authority, then the Corps would be the exclusive decision maker, and the EPA would be a commenting agency with no right of a veto or other right of elevation. This compromise effectively leaves in play the regulatory apparatus of both agencies, allows both agencies to continue to participate in the permitting arena, but allows the applicant, at a particular point in time in the process, to deal with one Federal decision maker and one set of managerial prerogatives.

The recently announced initiative which reestablished the Corps as the lead agency for permit review has proved somewhat useful, but it does not ameliorate the fundamental fact that as and to the extent the EPA is not a satisfied constituent, the Corps of Engineers is, as a practical matter, powerless to move forward until that constituency has been satisfied. Movement on this agenda is critical if we are to eliminate duplication among the regulatory agencies, and we would urge the Congress to refocus legislative effort on this issue.

ADMINISTRATIVE/JUDICIAL REVIEW

Significantly, both Senate Bill 1304 and the President's program move forward to provide additional protections to landowners in the areas of administrative and judicial review at various stages of the permitting process, and we applaud that effort. We believe, however, that some refinements are desirable in the interests of fairness and in the interest of leveling the playing field. The President's initiative to allow an administrative review of jurisdictional delineations is long overdue and clearly should be incorporated into any legislation coming out of the Congress of the United States. Senate Bill 1304 does not presently provide for the same, but

it is an extremely important concept that cries of fundamental fairness and assures a significantly increased level of accountability in the delineation of wetlands by those charged with that responsibility. We would urge in the strongest way possible that administrative review of jurisdictional delineations should be a part of the law and that the law should require that administrative review be conducted independent of the regulatory office of the Corps. Parochialism is, at best, a perceived threat to objectivity and, at worst, a real threat to objectivity. It cannot be ignored in this type of endeavor.

Senate Bill 1304 proposes a fundamental change in the review of permit denials, and we believe it inappropriate. As it is presently proposed, it would require that a permit denial must first be administratively reviewed prior to seeking judicial relief. Given the finality of a permit denial and the impact that it has upon a landowner, we believe that a landowner should have the right to pursue either of these alternatives. The necessity for administrative review, however, is an important plus that ought to be available to a landowner, and it should, therefore, be retained but not at the expense of immediate judicial review. If the issues which give rise to the denial of the permit are perceived as negotiable, they may well be able to be resolved in the administrative review format. On the other hand, if the issues which gave rise to the denial of the permit are issues for which there is little chance of compromise, it may well be that the only perceived recourse available to the applicant is through the courts. In that case, the applicant ought not have to expend another six, nine months to a year in the administrative review process before he can seek judicial relief from a decision he considers adverse to his interests. So, we

would urge that at the point in time that a permit is denied, a landowner would have either option available; administrative review or access to the courts.

DEADLINES FOR PERMIT APPLICATION

The President's initiative, as well as that of Senate Bill 1304, suggests the establishment of deadlines for wetlands permitting decisions under the Clean Water Act. Interestingly, the regulatory apparatus presently in place provides for similar deadlines, and while they seem to add some sense of predictability, satisfying a public that craves predictability, they, in reality, do not work. No one who has spent the time and effort to get an application to the public notice stage wants the application denied simply because the deadline has been reached, and absent one of the triggers for extension, that outcome is virtually assured. The issue is, how do you create a framework for making timely decisions which advance the process to a place where a permit decision can be made. While deadlines may contribute to that framework, we would strongly urge that in every instance, the applicant be given the right to waive the 90-day period in order to keep the applicant's application alive and subject to continued review and processing. Assuming the applicant is actively engaged in addressing regulatory comments and is in good faith pursuing the obtaining of a permit, arbitrary deadlines controlled by the government are counterproductive. However, the applicant should always be able to call for a decision and, once called for, obtain one within 90 days. These concepts should be included in Senate Bill 1304.

GRANDFATHERING: SEC. 7(3)(B); SECTION 7(e)(5)

The proposed language of Section 7(3)(B) of Senate Bill 1304 is problematic to the extent that it voids either an existing General Permit or one which has been and is being actively pursued simply because "a unit of government" over which a private party has no control has failed to become "part of a wetlands and watershed management plan approved under Section 322" by 12/31/96. The Foundation has a number of members who are currently involved in negotiations with ACOE, EPA, USFWS, together with state and local agencies pursuing an ACOE General Permit. Hundreds of thousands of dollars have already been expended in reliance on the validity of the presently existing regulatory scheme. It would be blatantly unfair to preclude a validly and legally adopted General Permit to remain in effect simply because another arm of government has not complied with the new policy direction in a timely way. The potential for abuse is great and, accordingly, "remain in effect" should be deleted from Section 7(3)(B).

Additionally, predictability requires consistently applied standards. Section 7(e)(5), which terminates General Permits after five years, should be rethought. We find no merit in arbitrarily terminating General Permits simply by reason of the lapse of time. In contrast, we would recommend that they be automatically renewed every five years provided the conditions of the original General Permit have been satisfied and there is no affirmative showing by the Government that material changes have occurred which require different treatment.

CLASSIFICATION

Turning to the issue which we believe to be most critical to the rationalization of the 404 process and to creating a framework that attracts private capital to the restoration of wetland resources, we believe the failure of Senate Bill 1304 to address classification and the President's somewhat lukewarm endorsement of the concept needs to be rethought.

On a positive note, the Administration's acceptance of the notion that not all wetlands are created equal and that permit applicants deserve "a timely and predictable regulatory response that is appropriate for the project being proposed" are important first steps which are to be applauded and encouraged to be made a part of a Congressional response.

Unfortunately, neither the Administration nor Senate Bill 1304 go far enough to recognize the absolute necessity for developing a mechanism for wetlands classification. On the one hand, the President suggests that "the prior categorization and ranking approach would not provide for consideration of the individual impacts associated with specific projects" and uses that as a rationale for concluding that national classification is not an agenda item for the Section 404 program. However, in the same breath, the Administration supports, as does Senate Bill 1304, the concept of advanced planning which, if implemented with the rigidity that has characterized our experience with the Advanced Identification program, will also "not provide for the consideration of individual impacts associated with specific projects."

We would suggest that both extremes are missing the point and that the development of classification criteria that are watershed specific can be done, and when done, can be determined

simultaneously with a jurisdictional delineation. Classification is the essential linchpin to extrapolating private capital to accomplish the fundamental objective of not only restoring degraded wetlands but increasing the wetland inventory beyond no net loss. The notion that lesser value wetlands should receive some measure of expedited permitting authority, while antithetical to the environmental agenda, is nonetheless an important tradeoff if we are to bring to bear market driven forces to encourage the restoration of lower value wetlands with higher value wetlands and to steer development activity away from those resources which are of higher quality and ought, in all fairness, be immune from the pressure of development. If such a program were implemented with replacement ratios determined by function and value that required compensatory mitigation to exceed 100% of the function and values being impacted, then the system will return more in wetland function and value than was taken away, and it will do so without tax revenues. In short, it imposes market-driven sequencing and delivers private capital to wetlands restoration and enhancement by directing development to low value wetlands in exchange for restoration and enhancement mitigation.

The President's approach seems to hint at moving in this direction, but the regulatory guidance which emerged as a result of this direction continues to impose a set of applicant-driven prerogatives which are rigid and considerably more inflexible than the President's approach would have suggested. The President's approach also suggests that as a precondition to the imposition of a classification system, there needs to be watershed level analysis within specified regions of the country that take into account the unique ecological characteristics of those regions. We do not disagree with that approach, but a few words of caution are appropriate.

A watershed planning process should be planned to establish the sizes, types, and locations of wetland/upland complexes that have the potential for long-term survival as functioning ecosystems. This type of analysis does not have as its goal the rigid classification of wetlands for permit purposes, but, in like manner, it does not seek to classify wetlands for long-term preservation purposes either. In this context, it is entirely appropriate to consider not only the ecological consequences of wetland classification, but the economic and political consequences as well.

Our experience has been that when the classification process gets too far in front of a permit application, it inevitably develops a rigidity that constrains creative solutions, giving rise to enormous expense and delay in attempting to work through more precise and accurate data in an effort to overcome what has become intentionally or unintentionally the "official map." It immediately denies any prospective future development use to the parcel and is inconsistent with the stated implementation of the 404 permit review which implies that a "public interest balancing" will occur only when an immediate and certain use for the site is identified. It can be argued, of course, that advanced classification is itself a balancing process, but all lands are not ripe for development at the same time, and it is for that reason that the President's comments are well taken when he again, and I repeat, points out that "prior categorization would not provide consideration for individual impacts associated with specific projects." It is also true that prior classification designed to limit access to lands is also burdened by the same constraint.

What we believe is needed is a comprehensive and holistic look at the needs of a particular region which are overlaid with the wetlands agenda, but it is not so precise as to

specifically take out of play any particular wetland resource, and Congress should encourage and appropriate funds to accomplish this study. This approach avoids premature conflict between the landowner and the government and recognizes that environmental resources and wetlands in particular, are fluid. That is, they will change over time. They will either improve, get worse, or stay about the same but, clearly, change is inevitable. When the watershed analysis is complete, then joint consideration of a variety of factors can lead to a classification system for application to individual permits. Significant, among others, are:

- 1) The magnitude of the ecological value to the watershed of the wetland site proposed for development, if developed is denied. This would be analyzed considering (a) how the site might in the future be isolated or fragmented from the watershed system even if the permit is denied; and
- 2) the scarcity of the wetlands type in the watershed; and
- 3) the difficulty and cost of restoring or creating lost functions, in relation to their ecological value, if development on the site is accepted.

In this alternative, wetlands classification is undertaken on a case-by-case basis and, as such, does not confront the takings problems over the entire watershed. Importantly, it allows the permit application to be evaluated in the context of the existing dynamics within the watershed and, as such, allows for consideration of individual impacts associated with the specific application. At the same time, it imposes a classification on the targeted wetland that will be determinative of the level of regulatory attention that is to be focused on the application.

For example, for low value wetlands impacts, the applicant can move immediately to mitigation. For medium value wetlands, some showing of how the applicant addresses practicable alternatives and sequencing would be required, but the application would be viewed holistically, and the mitigation component would be considered simultaneously. For those wetlands that are of high value, rigid sequencing and rigid practicable alternatives would continue to apply.

Such a system uniformly assures that market-driven capital would be attracted to low value wetlands, and if impacted, the tradeoff is mitigation provided and paid for by the applicant. Private capital will not move to high value wetlands except in extreme cases and, as a result, avoidance will be accomplished through the market. The restoration of low and medium value wetlands will occur with private capital and will advance the agenda of "net gain" while allowing some measure of development.

The system that presently exists and is still being implemented through the recent regulations just enacted on August 23 does not move in this direction. Senate Bill 1304 does not deal with classification of wetlands or the establishment of protocols for developing the same. Until we can move to a system in which it is recognized first that all wetlands are not the same and develop procedures for permitting around that reality, then the regulated community remains confined and constrained by a process in which there is no relaxation of the permitting standards irrespective of the quality of the resource being impacted and irrespective of efforts to inculcate flexibility where none has existed before. We would urge serious reflection on these notions.

MITIGATION BANKING

Both the Administration and Senate Bill 1304 are to be commended for their recognition of mitigation banking as a part of the solution and not a part of the problem. While that recognition is explicit, there is not much in the way of substantive direction that is provided for in either the Senate Bill or in the President's remarks and subsequent regulatory guidance. Of particular concern is the seeming inability to come to grips with a fundamental reality -- that mitigation banking is not going to happen in any meaningful sense with private capital until there is created some set of incentives that allows it to attract private capital. In this context, let's be clear what I mean by a mitigation bank. I do not mean a large wetland area developed by a permit applicant for internal mitigation credit. I regard that not as a bank but simply as a credit reserve for a particular applicant. A mitigation bank, in my parlance, is a restoration or enhancement effort of a degraded or almost defunct wetland to which unrelated third parties may gain access for mitigation credit by the payment of cash and, once obtained, may go forward with an unrelated project, provided other regulatory requirements are satisfied.

To my knowledge, only two such banks exist presently in the United States, and the jury is a long way from out on whether or not they will be successful. The tendency of the regulators to require that all mitigation be done, in place and functional before credits can be withdrawn is totally unworkable from any practical point of view. For those who would seek to invest in a mitigation bank, a requirement that it be totally successful before credits can be sold essentially means that the credit suppliers bear all risks and costs of mitigation failure.

Those costs are too high for any kind of a competitive return on investment, and for a market-based trading system to work, suppliers must be allowed to sell credits from mitigation sites that are not yet fully mature or even self-sustaining. Stated differently, the ability to sell the mitigation credits must be moved back on the demand/supply scale where some element of risk is assumed on the regulatory side of the equation. That risk can be minimized in some ways by appropriate bonding mechanisms and the like, but it is wholly inappropriate if we hope to attract private capital to this type of a venture to assume that it will be accomplished without strong economic incentives to do it. The developer would be, and clearly is, much better off to simply make a permit application and process his requirements for mitigation simultaneously with the permit application. If he is successful in achieving the permit, the mitigation component will be defined, and he will install it and build it in accordance with the permit application, all contingencies being satisfied simultaneously. The other mechanism is a high risk gamble which no one, in my understanding, would undertake other than other governmental agencies such as road departments, counties, municipalities, school boards and the like which do not have to earn returns on capital and do not have the same attendant risk associated with the expenditure of that capital as does the private sector.

SECTIONS 321, 322 AND 323

The development of State Wetlands Conservation Plans pursuant to direction by the Federal government is obviously important to bringing continuity and predictability to the

regulatory process. Given our strong endorsement of "classification," the Foundation would urge that Section 321(b)(2) be amended to read as follows:

(b)(2) An inventory of wetlands resources in the State which includes criteria for classification of function and value.

The necessity for public input and the failure to provide for the same have been areas of great concern among the regulated community, particularly as the 404 program has matured in recent years. Accordingly, the Foundation believes that Section 322(a)(3) should provide that the Governor will make his determination under this section "after notice and opportunity for public comment."

In like manner, the regulated community has inappropriately been excluded from the policy making arena in favor of weighted panels of government employees and technicians. Given the accepted fact that somewhere between 75% and 85% of the nation's wetlands are in private ownership, we believe the proposed Intergovernmental Wetlands Coordinating Committee should have private property owner representation and recommend, therefore, that a subsection (c)(10) be added to Section 323 as follows:

(c)(10). Ten private property owners selected and appointed by the Administrator from among nominations submitted by the Governor of each State.

CONCLUSION

On balance, we remain pleased that the Congress of the United States and the President are beginning to aggressively address these issues and believe that much has been accomplished. There is a unique opportunity at this particular point in time to structure a regulatory resource

management apparatus that not only works but will attract capital to accomplish the fundamental objective of adding to the nation's wetland inventory. The environmental agenda is admittedly suspect of that notion, but the other mechanism, which is a command and control regulatory apparatus designed to frustrate even a modicum of cooperation between government and the private sector has not proved workable, and implicit in both Senate Bill 1304 and the President's plan is a recognition of that reality. I would urge you to be creative, to go beyond the bounds of normal rhetoric and to, in the words of the President, "reinvent government" in a way in which it responds to the need not only to manage the resource but to encourage market-driven incentives to restore and replenish the resource.

Respectfully submitted,

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INAPPROPRIATE

STATEMENT OF KEVIN C. MARTIN, PRESIDENT, SOIL AND ENVIRONMENTAL SERVICES, INC.

I will keep my statement short in order to allow more time for questions, which in my opinion are normally the most productive part of these hearings. Forty percent of my work is wetland related. I have a B.S. in Conservation, and a M.S. in Soil Science with a mirror in Hydrology. I currently chair the Technical Committee of the National Society of Consulting Soil Scientists, I am on the Wetland Restoration Committee with ASTM, I assisted in testing Wetland Manuals in 1991, and I am on the NC Wetlands Rules Committee.

1. I come as a hands-on field person who, on a daily basis, deals with wetlands, delineation, mitigation, permitting etc. And therefore, my comments are based on my experience in dealing with the 404 program. Unlike a lot of the testimony I have heard in these and other hearings, I will stick only to aspects of the program I have first hand experience with.
2. In general the White House Policy and S. 1304 (the Chafee-Baucus Bill) takes steps in the right direction to clarify this murky issue. In fact, I am pleased to see that some of the specifics that many of us presented during the White House Interagency Task Force meetings have been incorporated into the current Policy Statement.

3. However, I do have several concerns related to those and other wetland issues.

A. An appeals procedure for both delineation and permitting is a necessity. This should be by persons not involved in the original action, possibly from an adjacent Corps district, since the original regulator involved would not have an unbiased opinion.

B. A value rating system is a must for a reasonable wetland program. However, the one proposed by the White House, (HGM, Hydrogeomorphic Classification System, developed in NC) would have to be significantly modified to work. It identifies types and kinds of wetlands but not in a way that their functions and values can be "ranked" into high, medium and low. It only results in high and medium categories. Other systems like those developed by the N.C. Division of Environmental Management, Water Quality Planning, Wetlands Group have been utilized and shown to work effectively. This has enabled me or anyone else who utilizes the system to have a feel where we stand instead of having to attempt to read a government employee's mind.

C. Corps Districts are too free to develop policy or opinions that can in many cases significantly change their authority. They should be *required* to follow DC guidance, otherwise property owners on the same type area in different districts do not get equitable treatment. In N.C. The Corps has approached this matter reasonably.

However, I have seen a site in Rhode Island where a "significant impact" existed according to Corps and permits were denied even though USF&WS and the state Environmental Agency approved the project. Later, on the very same site, the Corps issued permits which impacted much more wetland than the first, while still maintaining the first was significant and the latter were not.

D. Development of regional indicators of hydric soils by the Soil Conservation Service is *dangerous* and USDA should rename or drop this project. It was originally titled Regional Indicators of Soil Saturation. You cannot reduce an entire field of science to a 2 page list of indicators. No one has proposed doing this for vegetation criteria so why do it for soil? It seems that some of the agencies do not want to require their personnel to be trained thoroughly in all parameters of wetlands. If you want to water down soil science you will have to accept huge errors one way or another in delineations. If persons performing delineations are properly trained, there is no need for this list.

E. Continued funding of NWI maps makes no sense, they are not accurate enough for wetland delineation and by their own admission, do not even use the same criteria for wetland delineation as required in the 404 program. These funds could be better used elsewhere. For example, funding exists for states to set up wetland programs but once set up, no money is available to help run the program. This money could be better utilized in the application of such programs.

F. Proposed funding to map all wetlands in the U.S. is ridiculous. Senators should consider costs and need for this. Who will do it, how, where will qualified persons be found, how long will it take and at what cost? There is no need to map wetlands on property unless there is a proposed change in the use of property. The EPA has already funded projects in various states for mapping wetlands

- that will not be accurate enough for Corps use. Why not divert these funds to running state programs?
- G. Contrary to popular belief agricultural land is not exempt from wetlands regulation. In fact it is subject to two sets of regulations: Swampbuster and 404. This can have drastic impacts to continued operation of existing "noncommodity" crop farmland.
- H. Delineator certification is a good idea for the private sector and government personnel involved in wetland programs. Currently anyone who wants to claim to be a wetlands expert can. I have seen some catastrophic results due to unqualified persons practicing in this field.
- I. There is currently no consideration for project size in permit approval. This leads to small, piece-meal, poorly planned projects that attempt to avoid regulation rather than comply, because compliance is not practical for many large projects under the current regulations.
- J. I have been very disappointed in hearings of the past and in government testing and formulation of criteria for wetland delineation because of the absence of field persons with hands-on experience from the private and public sector in all relevant fields of science. After all, if anyone knows the problems with the current and past manuals, it is those who daily utilize them in the field.

The biggest drawback I have seen to the almost exclusive reliance on academics and office-based government employees, is that they are often not in touch with reality. There is a need for academics on the "cutting edge" of technology to work together with experts who have extensive field experience delineating wetlands utilizing the various manuals. Unfortunately the NAS Committee is very top heavy on the academic end.

Ironically the NAS is also *completely* devoid of experience in the field of soil genesis, morphology and taxonomy even though soils is one of only three criteria that make up wetland delineation criteria. A balanced committee of 18 would therefore seem to warrant at least 4 to 6 soil scientists with expertise in Soil Taxonomy. I do not see how any workable recommendations can come from NAS without their having qualified soil scientists on the committee.

- K. I would strongly recommend you and your staffs spend some time in the field to learn more about some of the types of marginal areas we are currently dealing with in many cases. I doubt any of you would believe that such areas are wetland or should be protected by the Clean Water Act. A system utilizing consideration of values in permit decisions or a reasonable change in the delineation manual if done properly will lead to protection of truly high quality wetlands.

STATEMENT OF DAN JAMES, FEDERAL AFFAIRS REPRESENTATIVE,
PACIFIC NORTHWEST WATERWAYS ASSOCIATION

The Pacific Northwest Waterways Association (PNWA) is a regional association that has been working for 59 years to maintain the multiple use concept in the development and management of the Northwest region's natural resources.

PNWA membership includes 149 organizations and individuals in Idaho, Oregon and Washington. PNWA represents:

- Public port authorities on the Pacific Coast. Puget Sound, and Columbia/Snake River Systems;
- Public utility districts, investor-owned utilities, and direct service industries;
- Irrigation districts;
- Grain growers, grain grower cooperatives, and upriver elevator companies;
- Major manufacturers in the region;
- Forest products industry manufacturers and shippers; and
- Transportation providers, consulting engineers, and others interested in the economic vitality of the Pacific Northwest.

Our Association thanks the Subcommittee for this opportunity to share our vision of wetlands program reform with you and your colleagues.

PNWA created a Wetlands Committee nearly a year ago to study the variety of issues that will be discussed during reauthorization of the Clean Water Act. The Committee offers an expansive range of expertise, including wildlife biologists, water quality specialists, natural resource attorneys, a former high ranking Administration wetlands regulatory official, port staff and utilities staff. This group prepared the following testimony on S. 1304 and has accomplished a review of the Administration's recently announced wetlands policy objectives.

Wetlands Regulation Needs to be Incorporated into the Land Use Planning Process

The states in the Pacific Northwest have a well deserved reputation for their high quality comprehensive land use planning. We believe that sound land use decisions have resulted from our local and regional comprehensive plans.

Under previous federal policy, federal wetlands regulation occurred after local land use decisions had already been made, significantly reducing the predictability for public and private landowners. PNWA has been seeking to improve the process by giving local jurisdictions the option to include federal wetlands delineation and alternatives analysis much earlier in their comprehensive land use planning process.

Description of the Problem. Most Northwest cities and counties develop land use plans to guide both development and preservation. Land is zoned for natural preservation, residential, commercial, industrial and other purposes. That process is generally open to the public, and local and federal governmental agencies participate in the development and review of the plans. The problem arises after the planning process is completed when a public or private landowner seeks to develop its property. For example, public port authorities own a substantial portion of their communities' industrial or marine industrial zoned property. It is not until a client has been identified and the port seeks to develop its industrially zoned property, after all other land use decisions have been made, that the federal wetlands process begins. Often, it results in a portion of the port's industrial property being delineated as wetland, which reduces the community's inventory of industrial property and reduces the ability of the local community to meet its economic needs.

PNWA's Solution. PNWA is proposing amendments which would provide that state and local land use planning processes, subject to certain criteria and subject to ongoing Corps of Engineers or Environmental Protection Agency oversight, would, at the option of the local jurisdiction, trigger the federal regulatory process. For those states with effective land use planning processes, federal wetlands regulation should be integrated into the local planning process. The presence or absence of wetlands would be considered along with all other factors in determining appropriate zoning for all classes of activity. If wetlands are present for any given class of zone, alternatives would be analyzed and the zone would be located in the most appropriate location as part of the alternatives analysis. Once the land use plan is adopted, the alternatives analysis required by the National Environmental Policy Act will be deemed to have been satisfied. Upon completion of an approved mitigation schedule, if required under the plan, development appropriate for the zone may occur.

This Approach Works. The State of Oregon provides an example of how this might be applied. Oregon has established a land-use planning goal for the preservation of natural resources. In Oregon's planning process, criteria are developed and natural resources are inventoried. The plans are implemented so as to protect the identified resources. Rules established by the State lay out a procedure for identifying conflicting uses. This involves determining the "economic, social, environmental and energy (ESEE) consequences" of the proposed use. The local planning jurisdiction is then responsible for classifying the site according to its ESEE. Management directives include hill protection for sites with high ESEE values, limiting conflicting uses to balance the ESEE or, in certain cases, allowing the conflicting use without restriction.

Incorporating Wetlands Regulation into the Land Use Planning Process

Section 12, 322(b)(1)(F) sets criteria for Wetlands and Watershed Management Plans "to integrate wetlands planning and management with broader water resource and land use planning and management. . . ." We agree with this approach. However, we propose to take this concept one step further by offering local jurisdictions three options:

1. To proceed under the current regulatory programs, under which development actions would be permitted individually.
2. To develop a land use plan which meets the requirements of a Wetlands and Watershed Management Plan. Which, upon completion, is approved by the federal government, or
3. To allow local jurisdictions to elect to initiate the federal regulatory process, including sequencing and alternatives analysis for land use classes, as a part of their local land use planning process. The result of this cooperative process would be the issuance of a Programmatic General Permit for development, protection and mitigation activities consistent with the plan.

We believe that this will increase the quality of local land use plans, increase the certainty of implementing the land use plans adopted by local jurisdictions, increase

the certainty of protection for valuable wetlands and increase the certainty that local communities will be able to meet their economic development needs.

We are pleased to submit, for your consideration, concept language that will increase the capability of local jurisdictions to achieve the policies and goals of S. 1304, as stated in Section 3. Our draft language, entitled "PNWA Concept Language, section 404 Amendments" is attached.

Comments on Other Provisions of S. 1304

PNWA endorses many elements of S. 1304 that will help local jurisdictions meet local and federal objectives for both protecting wetlands resources and meeting the economic needs of our communities and the nation. Among those elements are:

1. Sec. 4(b) Delineation of Wetlands. We support the continued use of the 1987 Wetlands Delineation Manual until the National Academy of Sciences has completed the study of wetlands authorized by Public Law 102-389.
2. Sec. 6 Permit Processing Improvements. PNWA supports the establishment of deadlines for issuing permits.
3. Sec. 9 Mitigation Banks. We support the establishment of mitigation banking as a form of advanced compensation for development.

There are some key sections of the bill for which we are suggesting modifications. They include:

1. Sec 5(2) The Term Fill Material. . . . The definition, by including "any material," is too broad. We propose replacing this definition with the definition of fill material in the Corps of Engineers and Environmental Protection Agency's Final Rule published in the August 25, 1993, Federal Register.
2. Sec. 6 Permit Processing Improvements. (c) Administrative Appeal of Permit Decisions. This section appears to allow the appeal of all provisions related to the issuance of a permit. This is likely to be an unreasonable drain on federal staff resources and prohibit the agencies from meeting the deadlines specified elsewhere in Section 6. We propose the bill be amended to include the Administration's policy regarding appeals, which would limit appeals to determination of regulator jurisdiction, permit denials and administrative penalties.
3. Sec. 8 Coordination and Clarification . . . (c) Other Exempt Waters and Areas. We agree that the items on the list of areas that shall not be considered to be navigable waters are appropriate, but we propose adding the following after (4)(A)(vi), "(vii) confined dredge material disposal areas constructed in uplands."
4. Sec. 9 Mitigation Banks, (2) Definition. PNWA agrees with the definition, but would go one step further, adding an expressed preference for using mitigation banks over on-site mitigation. We agree with the Administration's policy statement which states that mitigation banking "offers numerous advantages," including greater certainty of success, consolidation of fragmented mitigation projects and other benefits. (See attached PNWA Concept Language.)
5. Sec. 12, 322(d)(4) Programmatic General Permits. PNWA endorses the codification in law of Programmatic General Permits (PGP's), however, we propose to broaden the authority to issue PGP's to include activities consistent with approved state or local land use plans. (See attached PNWA Concept Language.)
6. Sec. 12, 323 Intergovernmental Wetlands Coordinating Committee. We agree with the need to integrate federal, state and local wetlands policies and planning, but we are concerned that the establishment of this Committee will drain the resources of the regulating agencies and will prohibit them from meeting other requirements of the Act, including meeting permit deadlines.

There is one issue that is not included in S. 1304, which we propose adding. There needs to be more flexibility in the permitting process to adjust the regulatory requirements based upon differences in wetlands functions and values. PNWA believes that this is a necessary improvement, and it is included in the Administration's wetlands policy.

PNWA greatly appreciates this opportunity to present our views on wetlands reform to the Subcommittee. We look forward to working with the Subcommittee throughout the Clean Water Act amendment process.

PNWA CONCEPT LANGUAGE, section 404 Amendments

The policy of the United States is to preserve and protect wetlands for their benefits to wildlife, flood control, water quality and other natural values. The Congress recognizes that a sound wetlands protection policy must permit responsible public, private, commercial and industrial activity. Current policy impedes development of land because Federal wetlands regulation occurs after local land use decisions have been made. Thus, an area may be designated under state and local law as suitable

for commercial or industrial development, yet Federal wetlands review and alternatives analysis would not occur until a specific development project is proposed. The result is uncertainty and delay. The Congress finds that land development and wetlands protection can better be reconciled if the Federal wetlands permit process is integrated with state and local land use planning and approval processes.

1. To assure continued coordination and to provide stronger Federal recognition and participation in the state and local land use planning process, the Secretary will publish final regulations within 180 days of enactment of these amendments that set forth specific criteria which at the option of the state and local governments may be used when preparing land use plans, watershed management plans, wetlands conservation plans and other similar, comprehensive plans and reports.
2. To the maximum extent practicable the Secretary shall ensure that the 404(b)(1) guidelines are satisfied in the state and local planning processes, including the alternatives analysis and mitigation requirements.
3. When requested by the state or local planning agency, the Secretary will cooperate fully and provide the staff resources necessary to ensure that the final plan will satisfy the Federal requirements under both NEPA and section 404 of the Clean Water Act.
4. Upon submittal by a state or local government, the Secretary shall review state and local plans for consistency with specific criteria set forth in the final regulations published in accordance with Paragraph 1, above, and approve or reject the adequacy of the plans within 180 days of submittal.
5. Within 90 days of approval of the state or local plan, the Secretary will implement programmatic procedures which will provide the section 404 authorization for specific activities that are consistent with the state or local plan.
6. After notice and opportunity for public hearing, the Secretary may issue Programmatic General Permits and Procedures including for example State Program General Permits (SPGPs), Local Program General Permits (LPGPs), or provide Abbreviated Processing Procedures (APPs) to authorize activities within the Secretary's jurisdiction.
7. Programmatic General Permits and Procedures are preferable approaches to case by case permitting of activities which the Secretary deems consistent with state or local land use plans or comprehensive plans prepared by Federal, state, or local governments or their respective agencies, port districts, river authorities, or similar entities.
8. Programmatic General Permits and Procedures may be used to authorize a wide variety of activities, provided the Secretary determines that the activities, including any appropriate and practicable mitigation, will have minimal cumulative impacts to the watershed.
9. Full compensation for wetlands can be provided by mitigation banks which have been approved by the Secretary to provide mitigation credits.
10. When the Secretary determines that full compensatory mitigation will be provided by a mitigation bank or site specific mitigation plan, the Secretary may waive the requirement for an off-site alternatives analysis for those wetlands which the Secretary determines to be low value. This provision satisfies the alternatives analysis required by both NEPA and the Section 404(b)(1) guidelines.
11. Credits from approved mitigation banks should be used as compensatory mitigation for low-value wetlands when available and practicable. Compensatory mitigation from approved mitigation banks when available is preferable to compensatory mitigation built during or after the wetland fill.

**STATE OF ALASKA TESTIMONY
STATEMENT OF COMMISSIONER JOHN A. SANDOR
COMMISSIONER
DEPARTMENT OF ENVIRONMENTAL CONSERVATION
TO THE
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
CONCERNING WETLANDS POLICY**

SEPTEMBER 15, 1993

ALASKA WETLANDS ISSUES

HISTORY AND STATUS:

Regulations for Alaska's wetlands should be tailored to the arctic, sub-arctic and coastal ecosystems and related to the sustainable development objectives of the State. In many of the lower 48 states, wetlands were inadequately protected and are now a scarce resource. Some states lost most of their wetlands. In contrast, Alaska has substantial wetlands - with minimum estimates of 130 million acres - more than the entire 48 states combined - and to date, 99.85 per cent of these wetlands remain.

Land ownership, restricted development opportunities and the unique arctic-subarctic environment also differentiate the Alaska wetlands situation from the rest of the United States.

Approximately 87 per cent of Alaska is in public ownership; 55% in federal ownership, where most development activities are prohibited or carefully regulated. Approximately 12 per cent of Alaska is Native owned with only the remaining 1 per cent privately owned. Private lands have very limited development opportunities compared to other states because of the lack of developed energy sources, very limited surface transportation systems and small population base (less than 600,000). Even agriculture is limited with less than 100,000 acres of the State's 375,000,000 acres in agricultural production or use.

Up to 80 per cent of Alaska can be classified as wetlands. The nature of the arctic - subarctic environment and climatic conditions create extensive interior permafrost and muskegs which cover millions of acres. Most of Alaska's 200 rural Alaska Native communities are located in the midst of areas classified as wetlands which will have to be developed if these communities are to achieve and sustain acceptable economic and environmental objectives. 135 of these Native villages lack basic water and sanitation systems, and the development of such facilities will require discharge of dredge or fill in wetlands.

Less than two tenths of one per cent (0.15%) of Alaska wetlands have been developed. This compares to the National average of 53 per cent. The other 49 states have developed from 20 per cent in Maine to 95 per cent in Ohio. Although a minuscule percentage of Alaska's wetlands have been developed, Alaska has a number of programs in place to preserve and protect high-quality wetlands.

Particular attention has been given to protection of anadromous stream corridors and coastal areas. For example, a large portion of the Bristol Bay drainage basin (Bristol Bay is the world's most productive salmon fishery) is protected by a State Park, Wood-Tikchik, which is the largest state park in the United States. Alaska has led the effort to buy back federal oil drilling leases off the Bristol Bay coast. Alaska has a vested interest in protecting its fishing industry. Proof of its success is demonstrated

by the fact that most commercial salmon harvests have been at high or record-breaking levels the last ten years.

Special protection of coastal areas and many inland areas such as the entire North Slope is provided by the Alaska Coastal Management Program (ACMP) which encompasses 43,000 miles of shoreline. The ACMP environmental protection standards prohibit development unless an applicant passes a practicable alternative test, a water quality test, and demonstrates a significant public need for the proposed project.

Because Alaska has already taken special measures to protect its unique wetlands and related resources, and less than two tenths of one per cent of its wetlands have been developed, imposing the same restrictions on Alaska that are imposed on the conterminous 48 states would be burdensome and unfair. The imposition of such restrictions would retard the sustainable development initiatives underway in rural Alaska Native villages and other communities. In fact, the larger communities and entire State's sustainable development potential would be severely restricted.

RECOGNITION OF ALASKA'S UNIQUE WETLANDS SITUATION:

The National Governor's Association recognized Alaska's unique situation and unanimously adopted the following statement:

"Finally, the Governors believe the national strategy should recognize the unique situation encountered by the State of Alaska...Because of certain geographic characteristics unique to the state (it is arctic and subarctic, with development constrained to limited geographic areas), policies and procedures that are reasonable in the conterminous states are not always applicable in Alaska..

The Governors recommend that the appropriate government agencies and stakeholder groups in Alaska work cooperatively to develop regional wetlands strategies that accommodate sustainable wetlands protection and economic growth for the state."

In recognition of Alaska's unique circumstances, the Environmental Protection Agency issued proposed regulations (1% rule) providing limited exceptions from National policy. These regulations have not yet been finalized.

It should be noted that the proposed 1 per cent exception IS NOT a blanket authorization to fill wetlands. The proposed exception leaves in place the Corps of Engineers permitting process. Through its mitigation authority, the Corps can require

that project size and configuration be altered to minimize adverse impacts on the environment.

Compensation - creating or restoring wetlands - is inappropriate in a state that has a low loss rate, limited uplands and substantial natural wetlands. In effect, compensation would require converting limited natural upland habitat into artificial wetlands.

BURDENSOME NATURE OF ALASKA WETLANDS PERMIT PROCESS:

Due to the abundance of Alaska wetlands, the federal government, through the wetlands permit program, controls an inordinate amount of local land use. From Barrow to Ketchikan there is frustration with federal control of local land use. The nature of the permitting process is that it is not necessary for regulators to deny a permit in order to stop a proposed activity. Denials often result through extensive delays in the permit process. In a survey of Alaska communities, fifty-one of fifty-three communities reported wetlands problems due to federal conflicts with local land use.

STATE OF ALASKA POSITION:

Standards developed for wetlands protection in the lower 48 states are not appropriate for Alaska's arctic, subarctic and coastal ecosystems, and the communities and cultures associated with this environment. The proposed one per cent exception is logical, because it maintains wetlands protection through the minimization requirement, and provides a total cap on losses.

The State of Alaska is already working to identify high-value wetlands which can be protected through no-net-loss compensation requirements. The State is also working with the Native villages and other communities to develop safe water and sanitation systems and the related infrastructure required for sustainable development.

We encourage federal agencies to enter into a partnership with the State of Alaska and its communities to cooperatively develop wetland strategies that are tailored to Alaska's ecosystems, and are consistent with the joint commitment to sustainable development.

STATE OF ALASKA'S PARTNERSHIP PROPOSAL:

When one considers that Alaska's land ownership pattern is:

FEDERAL: 208 MILLION ACRES - 59 PERCENT
STATE: 104 MILLION ACRES - 29 PERCENT
NATIVE: 44 MILLION ACRES - 12 PERCENT
PRIVATE: 5 MILLION ACRES - 1 PERCENT

The classification, management and protection of lands and resources, can most effectively be accomplished through a partnership arrangement between the local, state and federal governments and the involvement of Alaska Native and private land owners.

The desirability of a partnership arrangement is particularly evident when one looks at the ownership patterns on a land status map. Certainly, fisheries, wildlife, other resource and environmental values are not restricted to government boundaries. Add to this, the mix of the large and small cities, and the rural, Alaska Native villages and one must conclude that the people's needs and values are very closely related to that resource base. One of Governor Walker Hickel's favorite expressions is that people, people's needs and nature must be considered in the management of a country, region or state.

Alaska proposes a partnership with the federal agencies, somewhat along the lines of the arrangement already formed through the Alaska Rural Native Village Water and Sanitation Task Force and the Alaska State Rural Development Council. The Task Force is co-chaired by the State, Environmental Protection Agency and the City Manager of the community of St. Paul in the Pribilof Islands. The Council is a partnership of the State (and all its components) with the U.S. Department of Agriculture.

The goals of a wetlands partnership would enable communities to meet their economic and environmental protection needs; to define these needs and values and to develop a plan to sustain them over time. This, in my view, is what sustainable development is all about.

Alaska proposes, therefore, that the federal, state and local communities of Alaska develop a wetlands classification, management and protection partnership process integrated into this broader sustainable development objective.

ALASKA WETLANDS COALITION

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Amendment Concepts for S. 1304

1. MITIGATION BANKING CREDIT

Any banking effort must be designed to reward good behavior for wetlands protection and give incentives which cause states to protect wetlands. Those states having a good record or meeting certain performance standards on wetlands protection would not be burdened with the same mitigation requirements of a state with severe wetlands loss.

For instance, states which have contributed land to federal and state parks, refuges, preserves and wilderness areas would be provided with an advance credit of X percent of the protected acres in the mitigation bank, provided they have a low historic loss of wetlands.

Any compensatory mitigation requirements attached to a Section 404 permit would be deemed to be satisfied by debiting, on a like wetlands value basis, the advance mitigation credit. Only when that credit was exhausted would actual on-the-ground compensatory mitigation occur.

Alternatively, in order to focus on wetlands only, any state which has protected X percent of its wetlands could be entitled to a mitigation banking credit of Y.

2. HIGH-LOW RANKING SYSTEM

A strict regulatory regime designed to aggressively protect "remnant " wetlands is not warranted where substantial or abundant wetlands remain unused or protected.

A national regime which classifies wetlands into high, medium or low value categories should be established. High-value, scarce wetlands would remain subject to a strict regulatory regime akin to the Section 404 program. Conversely, low-value wetlands or wetlands of any value which are abundant would be granted more regulatory flexibility.

A further step would be to set up expedited permitting in those states which retain over 50 percent of the original wetlands in each category, again providing an incentive to protect or restore wetlands to that level.

3. EXEMPTION FROM MITIGATION REQUIREMENTS

This would provide, under certain circumstances, that a state is exempt from the upland alternatives presumption and the compensatory mitigation step of sequencing. Eligibility criteria for the exemption could be as follows:

- a. any state with X percent of its original wetlands still intact;
- b. any state that has X acres or more of protected wetlands;
- c. any state that has more than 50 percent of its lands in public ownership and more than X percent of those lands committed to conservation purposes; or

A variation would provide that only "high-value" wetlands in certain states remain subject to the alternatives analysis and compensation step. All other wetlands within an otherwise eligible state would be exempt.

4. STATE TAKE-OVER WITH EXPANDED FLEXIBILITY

This option envisions inducing states to manage Section 404 program by enabling them to run programs with fewer restraints than provided by the current COE/EPA program. A qualified state program would preempt federal regulation, but individual permits would be subject to federal review or veto. COE/EPA would be barred from taking back the program unless they can affirmatively demonstrate that the state is failing to properly administer its program.

5. SECTION 404 JURISDICTION

Enact into law a definition of jurisdictional wetlands that incorporates the original 7th Circuit ruling of the Hoffman Homes case. This would exempt isolated wetlands from the reach of Section 404. Most coastal wetlands, as well as those along major rivers and streams, would still remain subject to Section 404.

6. ANCSA LANDS CONCERNS

Section 404 unfairly diminishes the value and purpose of lands which were part of the federal government's aboriginal lands claims settlement in Alaska, conveyed under the Alaska Native Claims Settlement Act (ANCSA) in 1971. This problem should be recognized and corrected, since village and regional corporations were given the land for community needs, including expansion and development, and have no alternative but to use those lands. Any action which unfairly impacts native lands or de-values them should be removed from consideration in this bill.

7. RURAL COMMUNITY CONCERNS

Although wildlife habitat is important, the Alaska National Interest Lands Conservation Act (ANILCA) set aside tens of millions of acres of the best Alaska habitat wetlands in 1980. At the same time, more than 200 Alaska villages still reflect Third World living conditions, in particular with regard to water and sewer facilities. Basic human health needs must be given adequate status in Alaska.

S. 1304 should enable human health needs to have an overriding priority, especially in any state where wetlands preservation efforts have been significant, where wetlands are abundant, or where practical alternatives to utilizing wetlands are scarce, limited or non-existent.

Thank you for the opportunity to submit these comments for the record on S. 1304. Briefing papers on each topic of concern outlined above are available and will be sent to the Committee as mark up on the bill begins.

WRITTEN TESTIMONY OF ARCO

Mr. Chairman, members of the Subcommittee, ARCO appreciates the opportunity to testify on S. 1304, the Wetlands Conservation and Regulatory Improvements Act, introduced by Senators Baucus and Chafee. ARCO agrees with Senator Chafee that any amendments to wetland protection regulation should result in enhanced effectiveness, fairness and flexibility. We think Congress can provide a legislative solution to eliminate the unnecessary delays and confusion that continue to encumber the wetlands permitting process. For the past decade, EPA and others have attempted to solve this problem by continually modifying regulations which were never originally intended to protect wetland habitats. We have the opportunity now to adopt new legislation for wetland permitting that will specifically provide both protection of wetlands and flexibility sufficient to allow appropriate development to continue.

ARCO's comments and opinions have been prepared principally by Mike Joyce, Senior Consultant for Biological Sciences for ARCO Alaska, Inc. Mr. Joyce is a trained wetlands scientist with a Master's Degree in Zoology. For the past 23 years, 19 of which have been in Alaska, he has participated in a wide variety of wetlands research projects. In Alaska, this research has focused on the study of wetland habitat values, fish and wildlife habitat use, site mitigation and restoration, and wetland classification and functional assessments. Mr. Joyce has also monitored the response of wetland habitats and their fish and wildlife populations to the development of North Slope oil fields since 1974. Mr. Joyce is a respected expert in wetlands biology.

ARCO's comments relate primarily to Alaska, but they also touch on concerns in the lower 48 states. This testimony focuses on four important wetland protection issues:

- The need for a wetlands policy that recognizes regional classifications based on value as an important and necessary element. All wetlands are not identical. They vary not only in size and function but also in relative value.
- The use of general permits, which ARCO supports.
- The use of mitigation banking which is appropriate for use in the lower 48 states, but not for Alaska.
- The need for a special approach to mitigation in Alaska. Alaska is unlike any of the lower 48 states. Much of the State is comprised of wetlands and there has been relatively little development. Mitigation procedures appropriate for use in Alaska are necessarily different from those appropriate for the lower 48. ARCO recommends basing Alaska mitigation rules on the 1981 U. S. Fish and Wildlife Service mitigation policy.

REGIONAL CLASSIFICATION AND CONTROL

ARCO believes any new wetlands legislation should recognize regional wetland differences and provide a clear mechanism for local authorities to determine appropriate actions within their regions. The situation in Alaska is illustrative of why this is so important. The White House Wetlands Task Force recognized the unique conditions in Alaska. The vast abundance of wetlands there, combined with the low availability of sites for mitigation, justifies alternative regulatory treatment. Consequently, the Task Force proposal calls for appropriate means to ensure regulatory flexibility and an alternative permitting procedure in Alaska. S. 1304 discusses the benefit of regional conditions and permitting flexibility in a general sense. We believe this bill can be greatly enhanced by specifically recognizing and authorizing regional classification of wetland habitats.

In addition to regional classification, we believe it is necessary to tie any requirement for mitigation to the regional abundance of each of the classified habitats. Without classification and mitigation based on value and abundance, we don't believe any legislation will successfully reduce the current controversy.

ARCO also agrees with environmentalists, regulators, and others who advocate that wetland decisions should be based on sound science and local conditions. For this to occur, several questions must be answered in each region. How abundant are wetlands in a particular region? What are the cumulative losses to date? What are the projected future losses? How are those wetlands being used to support local fish and wildlife populations? Are those populations being stressed? What other functions do the wetlands provide? Wetlands protection policy must address these questions in order to mitigate any losses of the functions provided by wetland areas that are or have been developed.

Finally, we favor permitting decisions at the local level without EPA veto authority. The existing veto authority clouds wetland permitting without adding meaning-

fully to the process. EPA has vetoed only 11 permit decisions in over 150,000 reviewed during the past 21 years.

GENERAL PERMITS

We endorse S. 1304's use of general permits (GP's) and believe it will enhance the regional flexibility we all seek. However, the bill appears to contain a contradiction. Under S. 1304, GP's are to be used to cover activities that are recognized as having only minimal adverse environmental effects. It appears, however, that compensatory mitigation could be required for any activity authorized under a general permit. Requiring compensatory mitigation for each action authorized under a GP should not be necessary, since GP's cover only those actions which have minimal environmental impact. Requiring mitigation will reduce, rather than enhance flexibility. We suggest eliminating compensatory mitigation from the general permitting provisions of the bill.

MITIGATION BANKS

S. 1304 calls for creation and implementation of mitigation banks to be used where individual applicants have difficulty achieving in-kind and on-site compensatory mitigation. However, the bill requires that in order to bank replacement habitat, the bank must be fully established in advance of authorizing any future proposed developments. For projects that have to begin in the next 3 to 5 years, it is not possible to provide replacement habitat in advance. It will likely take that long to authorize, locate, design, and implement mitigation banks. In Alaska, completion of successful replacement habitat will then take an additional 5 to 8 years. It is not practical to stop all development until this replacement habitat is fully functional. We support the use of mitigation banks in the lower-48 states, where substantial wetland loss has occurred. However, due to the conditions in Alaska, we do not believe a bank is necessary and, under any circumstances, should not require completion of replacement habitat in advance.

MITIGATION POLICY IN ALASKA

Alaska is a region where wetlands are abundant and not being depleted. The difficulty is not that we have few wetlands left, but that we have a state dominated by wetlands with few alternative upland sites to use for development. In fact, there are about 170 million acres of wetlands in Alaska. The rest of the state is mostly mountain slopes and ice fields. Additionally, about 99% of the state is owned by government authority. These facts greatly complicate the wetlands permitting process in Alaska.

Some of the difficulties involved in compensatory mitigation in Alaska are demonstrated by the following hypothetical development on the North Slope of Alaska. ARCO has announced the discovery of a potentially commercial oil find in the Beaufort Sea about 60 miles east of the existing Prudhoe Bay oil fields. This reservoir is about 12 to 18 miles offshore. If this prospect is economically viable, a pipeline would need to come on shore at the nearest land fall and then proceed across the North Slope coastal plain to tie into the existing facilities at Prudhoe Bay. In addition to the pipeline itself, a gravel road would follow the pipeline route. This route lies in an area that has been classified as jurisdictional wetland by the Corps of Engineers and is part of a large contiguous wetland habitat that is 37 million acres in size. Thus the project will necessarily be located in wetlands.

If compensatory mitigation were to be required for the pipeline, there are no disturbed footprints or upland habitats in the vicinity of the pipeline route to provide in-kind, on-site replacement. The only disturbed areas are the existing oil fields 60 miles to the west. However, these sites are already subject to restoration requirements and, therefore, are not available for mitigation credits. Thus, there are no on-site locations available for compensatory mitigation for this new project. Additionally, if ARCO were required to use a mitigation bank with mitigation credits created in advance, this project would be delayed for up to 10 years waiting for development and completion of the replacement habitats.

Furthermore, we know that not all of the wetlands on the coastal plain have equal values and functions. They include a wide diversity of habitat values. As indicated above, the permitting process also needs to recognize those different values and encourage location of facilities on the least valuable habitats. Without classification and mitigation based on value and abundance, there is no incentive for an applicant to locate facilities to avoid higher value areas.

Although we do not believe the mitigation bank system in S. 1304 can be used effectively in Alaska, we believe there is an alternative, acceptable approach. It is based on a program already in existence, the U. S. Fish and Wildlife Service Mitiga-

tion Policy finalized in 1981. The fundamental principles of this policy are based on the notion that: 1) avoidance or compensation should be recommended for the most valued resources; and 2) the degree of mitigation should correspond to the value and scarcity of the habitat at risk. In implementing its policy, the Service established four wetland resource categories: 1) high value and unique or irreplaceable ; 2) high value and scarce in the region; 3) high value but abundant within the region; and 4) medium to low value. The Service applies a mitigation requirement to each of these values, ranging from no loss of habitat value for the top categories to minimized loss of habitat value without further compensation for areas that are of medium value or are abundant in the region.

A program based on these concepts will work in Alaska. It provides flexibility and the recognition that, in Alaska, where we have few upland sites to turn to, we still need to build schools, airports and other public facilities, as well as explore for and produce oil.

Mr. Chairman, thank you again for the opportunity to testify on the wetlands regulatory program. ARCO has extensive experience with development in Alaska, and we would hope that this experience would prove useful to you as you consider wetlands regulation. We will be happy to provide any additional information you may need.

CHAMBER OF COMMERCE
OF THE
UNITED STATES OF AMERICA

WILLIAM T. ARCHEY
SENIOR VICE PRESIDENT, POLICY
AND CONGRESSIONAL AFFAIRS

1615 H STREET, N. W.
WASHINGTON, D. C. 20062-2000
202/463-5417

September 15, 1993

The Honorable Bob Graham
Chairman
Subcommittee on Clean Water, Fisheries and Wildlife
Committee on Environment and Public Works
United States Senate
Washington, D.C. 20510

Dear Mr. Chairman:

The U.S. Chamber of Commerce, the world's largest federation of 215,000 businesses, 3,000 state and local chambers of commerce, 1,200 associations, and 68 American Chambers of Commerce abroad, appreciates this opportunity to present its views on S. 1304 and related proposals regarding this nation's wetlands policy. The Chamber appreciates your leadership and that of Senator Chafee and welcomes S. 1304, "The Wetlands Conservation and Regulatory Improvements Act," as a constructive step toward Section 404 reauthorization. We respectfully request that a copy of this letter be included in the hearing record.

Any reform of wetlands policy should include the streamlining of the permit process. For too long, people have lost substantial resources because administrative and regulatory agencies have been slow to issue permits. The provisions in this bill, including the 90-day limit on permit decisions and the greater use of general permits, would enable landowners and businesses to plan for the future without unnecessary and costly delays.

Furthermore, the bill's relief for agriculture is timely and necessary. By making the Soil Conservation Service the lead agency for agricultural wetlands, S. 1304 recognizes the importance of having a regulatory agency that is sensitive to the needs of production agriculture. In addition, the exemption for prior converted croplands is consistent with the policies of the previous administration. Also, full funding of the Wetlands Reserve Program will ensure protection for some of this nation's most valuable wetlands.

We appreciate S. 1304's recognition that wetlands have different values and functions. Wetlands differ in their relative value, and this must be taken into account by regulatory agencies when making permit decisions.

In addition, the Chamber believes that mitigation banking — a market mechanism with the potential to minimize the economic impacts on individuals — will help resolve the wetlands debate. By allowing property owners to trade reclaimed wetlands for building on a specific site, there will

be greater flexibility in the system, and therefore, a more efficient means of protecting this nation's wetlands.

The Chamber welcomes the recent administrative proposals, which are consistent with S. 1304 and which further contribute to the resolution of the wetlands debate. Specifically, a return to the use of the 1987 delineation manual, in which all three traditional indicators of a wetland — saturation for 21 days, hydric soils, and hydrophytic vegetation — are necessary for such classification, will ensure a balance between wetlands protection and economic development.

While the Chamber agrees with the Clinton Administration's position on the treatment of prior converted croplands, mitigation banking, and permit process streamlining, we have concerns regarding other provisions in both the Administration proposal and S. 1304. Both seek to use state and local watershed management programs to assess the values and functions of wetlands rather than having the regulatory agencies decide. Although this may increase the flexibility of landowners with regard to developing low-value wetlands, it will not ensure that the regulatory agencies will abide by the decisions of the local planners. The Clinton Administration believes that the cost of mapping all the nation's wetlands will be prohibitive. The Chamber believes, however, that a general classification system would greatly reduce arbitrariness in the decisionmaking process, and can be completed within budgetary limits.

The sequencing process currently used, and outlined in the Administration proposal, is long and costly. A landowner must seek alternate sites, minimize environmental harm, and then compensate for the damage to the wetland. This approach is a long and unnecessary delay to the individual's use of private property. In addition, each time an agency prohibits an individual from developing private property due to the presence of wetlands, the agency, in effect, commits a regulatory "taking," and the owner should be justly compensated.

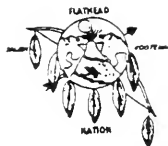
The Chamber thanks you and the Committee for taking significant steps toward resolving the wetlands debate. We look forward to working with you to ensure that the final version of Section 404 is one that provides the protection that is warranted for the preservation of our wetlands, but does not unduly burden or restrict landowners.

Sincerely,



William T. Archey

cc: Clean Water, Fisheries, and Wildlife Subcommittee Members
Bill Leary, Majority Counsel
Jimmie Powell, Minority Professional Staff Member



THE CONFEDERATED SALISH AND KOOTENAI TRIBES
OF THE FLATHEAD NATION

P.O. Box 278
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TRIBAL COUNCIL MEMBERS:
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Louis Adams
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Patrick Lethland
Henry "Hank" Baylor
John "Chris" Lozeau
D. Fred Matt

September 28, 1993

The Honorable Senator Max Baucus, Chairman
Senate Environment and Public Works
Subcommittee on Clean Water, Fisheries and Wildlife
SD-456 Dirksen Senate Office Building
Washington, D. C. 20510-6175

Dear Senator Baucus:

The Confederated Salish and Kootenai Tribes of the Flathead Nation have reviewed Senate Bill 1304, titled "the Wetlands Conservation and Regulatory Act". The Tribes take a special interest in this legislation because some of the best examples of glaciated wetland habitat located in the intermountain west are located within the boundaries of the Flathead Indian Reservation. The Tribes have long recognized the importance of this wetland habitat and have taken special measures to protect and preserve the integrity of these areas.

Enclosed with this letter please find technical and policy comments on the proposed legislation. We wish to ask the Subcommittee to accept these comments as the Tribes' testimony on the legislation. Hopefully, these comments will be utilized by the Senate Environment and Public Works Subcommittee on Clean Water, Fisheries and Wildlife in amending some of the provisions of the legislation to incorporate concerns that the Tribes hold with regard to the present version.

The Tribes appreciate the opportunity to provide testimony on this important piece of legislation. If questions arise regarding the contents of this testimony, please do not hesitate to contact me.

Sincerely,
Confederated Salish and Kootenai Tribes

Michael T. Pablo, Chairman
Tribal Council

TESTIMONY OF THE CONFEDERATED SALISH AND KOOTENAI TRIBES

SENATE BILL 1304
"WETLANDS AND REGULATORY IMPROVEMENTS ACT OF 1993"

The Confederated Salish and Kootenai Tribes of the Flathead Nation wish to provide testimony on the contents of Senate Bill 1304, titled "The Wetlands Conservation and Regulatory Improvements Act of 1993". The Confederated Salish and Kootenai Tribes take a special interest in the conservation of wetland resources because of the significant wildlife and fisheries habitat values they provide, their functions in improving water quality, their flood control capabilities, their groundwater recharge functions, and their recreational value.

The presence of some of the last and best examples of glaciated wetlands within the Intermountain West and a realization of the importance of such areas within the exterior boundaries of the Flathead Indian Reservation led the Tribes to adopt the Tribal Aquatic Lands Conservation Ordinance in 1987. That ordinance established a mechanism to slow the rapid pace of wetland conversion on the Reservation and created a review and permitting process for project proposals. The Tribes have applied for "treatment as a state" for purposes of Section 404, and the Tribes' ongoing concern for wetland resource values has resulted in Tribal initiatives in wetland inventory and classification and conservation. Initiation of work on the development of a wetland conservation strategy for the Flathead Reservation is presently in the early stages of planning.

The Confederated Salish and Kootenai Tribes applaud the efforts of Senator Baucus and Senator Chaffee in attempting to resolve some of the controversies that have occurred with respect to wetland issues. Language contained in Senate Bill 1304 sets the stage for resolution of some of these controversies. However, some of the other components of the legislation raise significant technical and policy concerns for the Confederated Salish and Kootenai Tribes. These concerns are detailed below.

The Tribes' primary concerns with the language contained in Senate Bill 1304 involves the nearly total lack of consideration of the jurisdictional concerns of Indian Tribes and the lack of specific language to allow Tribal governments to play active roles in wetland conservation planning, oversight, cooperative ventures, training opportunities, funding grants, conservation incentives, and restoration efforts. This is cause for major concerns for Tribes, especially in light of the fact that many pieces of environmental legislation do contain language in reference to Tribes and Tribal interests. Some of the examples include the Clean Water Act, the Clean Air Act, and the Safe Drinking Water Act. In addition, there is no stipulation for representation of the interests of Indian Tribes on the Intergovernmental Wetlands Coordinating Committee. By

essentially ignoring these concerns, the legislation disregards the Federal government's trust responsibility to Indian Tribes established by the various treaties entered into by Tribes and the United States. We remind you that Indian Tribes take the language contained within these treaties very seriously. In general, we recommend that Indian Tribes be added to the language of the bill to all sections which specify activity by state and local governments.

As written, Senate Bill 1304 contains the following language about which the Confederated Salish and Kootenai Tribes are concerned:

Sec.3 Declaration of Policies and Goals

The term "all levels of government" is ambiguous. Although it should be assumed that this language includes all departments and agencies of Federal, Tribal, State and local government, clarification is needed. We recommend amending Sec. 3 as follows: "(8) ...involving all levels of government, including Tribal governments".

The term "no overall net loss of the remaining wetlands resource base of the United States" can be defined as mandating an acre-for-acre replacement of wetlands lost to various development activities, yet this approach is not clearly stated. In many areas, acre-for-acre replacement is in fact inadequate. The bill's language should not limit wetland replacement to that formula.

Sec. 4 Definition and Delineation of Wetlands

Continued use of the 1987 Corps of Engineers Wetland Delineation Manual is mandated. The use of the 1987 manual may be acceptable for the short term, but it should be noted that the primary reason for development of the 1989 version of the manual was that the 1987 manual was deemed inadequate in scientifically-based wetland delineation criteria and more was considered to be too subjective. Use of the 1989 manual would be more acceptable, as well as more defensible based upon scientific merits. In fact the 1989 manual was based upon the best available scientific information; and it did take into account regional variations in hydrology, soils, and vegetation.

We recommend amending Sec. 4 as follows: "(2) (A) be developed in consultation with interested States and Indian Tribes".

We agree with the concept of standardized training of wetland delineators, but we would like to see the inclusion of Tribal

delineators along with consultants, and State and local government personnel as eligible for training and certification. Before agencies can instruct the general public regarding wetland delineation, there is a need to assure that agency personnel know how to delineate a wetland. This situation does not seem to uniformly exist today. Thus, standardized methodologies are essential during the early stages of redesigning this process.

Sec. 6 Permit Processing Improvements

In general, we support the language and processes included in Section 6; however, we recommend that the language be amended to reflect the role that Indian Tribes can play in these processes. As a result, we recommend amendment of Section 6 as follows: "(4) (C) ...the Governor of the State, or the Chief Executive Officer of the Indian Reservation in which the activity occurs ...".

Sec. 7 General Permit Improvements

We recommend amendment of Sec. 7 as follows: "(2) Categories of Activities. General permits may be issued on a State, Reservation, regional, or national basis...".

Sec. 8 Coordination and Clarification of Program Concerning Agricultural Activities

The language regarding prior converted cropland is a concern because it seems to totally disregard the thousands of acres of once productive wetland that have been lost to agriculture. A methodology is needed to attempt to reclaim the wetland values of at least some of these lands and to protect "farmed wetlands", which still exhibit wetland characteristics.

We recommend amendment of Sec. 8 as follows: "(d) (F) resulting from any activity with respect to which a State or Indian Tribe has an approved program ...".

Sec. 9 Mitigation Banks

The Tribes recommend that the Administrator and the Secretary's rules for mitigation banking include Indian Tribes along with States in the list of entities properly authorized to operate such banks, upon submission of approvable plans.

Sec. 12 Wetlands Conservation, Management and Restoration

We recommend amendment of Sec. 12 as follows: (A). "Funding

For State and Tribal Wetlands Conservation Plans. - Section 104 (b) (3) (33) U.S.C. 1254(b)(3) is amended by inserting immediately before the semicolon"and for the development and implementation of State and Tribal wetlands conservation plans under Section 321."

Sec. 321 State Wetlands Conservation Plans

We recommend amending the title of Sec. 321 to " State and Tribal Wetlands Conservation Plans". We also recommend inclusion of the following language.

"(a) ...grants to States and Indian Tribes to assist in the development and implementation of wetlands conservation plans..."

"(b) Contents of Plans. To qualify for assistance under subsection (a), a wetland conservation plan shall generally include:

- (1) management strategies and policies for achieving within the State or Indian Reservation, as applicable, the goal expressed in Sec. 101(a)(8);
- (2) an inventory of wetland resources;
- (3) a description of the major causes of wetland losses and degradation in the jurisdiction, including an estimate of historic wetlands losses;
- (4) a description of State, Tribal, and local government programs applicable to wetlands resources in the jurisdiction;
- (5) identification of sites with wetland restoration potential;
- (6) identification of riparian areas with restoration potential;
- (7) ...a schedule for implementing the elements of the plan;
- (8) ...a mechanism for monitoring achievement of the stated goals of the plan
- (9) ...measures to assist in the development of wetlands and watershed management plans under section 322, and
- (10) involvement of individuals and organizations with expertise or interest in wetlands conservation, land use planning and responsible development."

Sec. 322 Wetlands and Watershed Management Plans

This is perhaps the area of our gravest concern, primarily because as it is now written, local conservation districts appear to be eligible to obtain "management authority" over any area designated by the Governor of a State. Our lengthy litigation history with a local irrigation board serves as an excellent

example of the problems that tribes might face should they have to accede to "substate regional planning organizations". As a result, we recommend that this entire section be rewritten to recognize that Governors cannot unilaterally delegate such authorities, at least on Indian reservations, and that Tribal Chief Executive Officers can perform that function, if they so choose, on reservations.

We specifically recommend that Tribal governments be included in the eligible governments list at (f) Research Program.

Sec. 323 Intergovernmental Wetlands Coordinating Committee

Under this sections, we recommend that Tribes be accorded the proper government-to-government relationship with the federal government by inclusion of the word "Tribal" between "federal" and "State" in (a), first sentence and in (4), add "or Tribal" after "State" and at (c) Membership, include qualified representatives of Indian interests. We further recommend that the number of State wetland experts to be appointed by Governors be reduced to five and that five such experts be appointed by Indian Tribal governments. In addition, we fail to see a constructive legitimate role which might be played by the National Association of Counties or National League of Cities, both of which ought to be fairly well represented by the National Governors' Association and the State wetland experts. We also recommend that a qualified Indian representative serve as co-chair of such a group.

Sec. 324 National Cooperative Wetlands Strategy

We recommend the inclusion of the word "Tribal" after "State" and before "regional" at (c)(1).

In conclusion, the Confederated Salish and Kootenai Tribes believe that there is a need to achieve consistency among the various governmental agencies that delineate and regulate wetlands. However, this need should be tempered by the need to develop sound scientifically-based methodologies for delineation, as well as the need to treat all qualified governments with the proper respect. We also believe that Indian Tribes throughout the United States can and should be allowed to play a role in this national effort to conserve and manage the wetlands resources of the nation. We firmly believe that the language changes that we have recommended as amendments to Senate Bill 1304 will serve to achieve both of these objectives.

MARIN CONSERVATION LEAGUE

A non-profit corporation founded in 1934

35 Mitchell Boulevard, Suite 11
San Rafael, CA 94903
Office telephone: 472-6170**Past and Present**

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Bolinas Lagoon/Kent Island
Stinson Beach
Drakes Bay Beach
Tomales Bay
Pt. Reyes National
Seashore
Richardson Bay Sanctuary
Corta Madera Tidelands
Strawberry Tidelands
Bothin Marsh
Haardt Marsh
The Northridge
Rancho Olompali
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Walter Ryce

Barbara Salzman

George Sears

Lawrence Smith

Gary Spralling

Jean Starkweather

Pariann Wood, Ph.D.

Director Emeritus

Gordon Strawbridge

August 3, 1993

Senator Bob Graham
Senate Environmental and Public Works Committee
United States Senate
Washington, D.C. 20501

Dear Senator Graham and Committee Members:

Please enter this letter into the Record of your Committee's Hearings on the Clean Water Act.

The Marin Conservation League representing 4,500 members locally has long been interested in wetlands. It is essential that our nation strengthen its wetlands laws. We urge your strong support for wetlands. We also urge support of Senator Boxer's wetlands bill, SB 1195.

Sincerely,

Karin Urquhart
Executive Director

FAXED



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To preserve, protect and enhance the natural assets of Marin County for all people



Montana Audubon Council

State Office: P.O. Box 595 • Helena, MT 59624 • (406) 443-3949

Chapters:

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Bitterroot Valley

Flothead Audubon
Flothead Valley

Five Valleys Audubon
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Last chance Audubon
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Rosebud Audubon
Miles City

Socajawea Audubon
Bozeman

**Upper Missouri
Breaks Audubon**
Great Falls

**Yellowstone Valley
Audubon**
Billings

Senator Max Baucus, Chairman
c/o Jo-Ellen Darcy, Professional Staff
U.S. Senate Committee on Environment and Public Works
505 Hart
Senate Office Building
Washington, D.C. 20510

Dear Senator Baucus,

October 14, 1993

On behalf of the Montana Audubon Council, we submit the following comments on the S. 1304. Please include these comments, as well as the enclosed report entitled Protecting Montana's Wetlands: An Overview of Montana's Section 404 Program, as part of the official hearing record for S. 1304.

The Montana Audubon Council is the unified voice of the nine Chapters of the National Audubon Society in Montana. Our membership currently stands at approximately 2,300. You may receive comments on this legislation from others in the Society.

First, there are some positive aspects to S. 1304 which should be recognized. The good aspects of this legislation are as follows:

1. The bill provides for a landowner assistance program, which would assist small landowners with the delineation of wetlands on their property and also furnish them with technical assistance in order to prepare wetlands management plans.
2. The bill creates an appeals process for permitting decisions under Section 404. This would allow the landowner or any person who participated in the public comment process to appeal permitting decisions without having to resort to the judicial system as the only means of appealing decisions.
3. The bill requires the Corps to monitor the issuance of General Permits. Currently, the Corps cannot adequately track general permitting decisions because general permits are generic authorizations that are issued only with minimal environmental review. The Corps needs a monitoring program to determine the real impact that general permits have on wetland habitat. A review would occur every two years, and would include estimates of acreages of wetlands impacted.

As far as the negative aspects of the bill are concerned, the Montana Audubon Council has numerous concerns. Below we detail our concerns on a number of issues, including some issues that are not clear because of vague drafting language. The negative aspects of this legislation are as follows:

1. In the past, the Corps has not regulated activities such as draining, channelization or excavation, even though these activities could harm wetlands. The Corps recently completed a rulemaking process that expanded the scope of regulation under Section 404 to include these activities. Even so, the Corps only regulates those activities to the extent that they actually result in a "filling" of wetlands. This interpretation still leaves a loophole for the "pure" drainage, flooding, etc. of wetlands or other activities which does not involve the physical placement of fill in wetlands.

Although S. 1304 claims to expand the scope of wetlands regulation to draining, mechanized land clearing, ditching, channelization, or other excavation, it only does so as it relates to the "addition or redeposit of dredged or fill material," thus preserving the limited scope of jurisdiction recognized by the Corps in its recent rulemaking (and leaving the loophole for "pure" drainage, flooding, etc.).

In comparison, S. 1195, introduced by Senator Boxer, focuses on the following activities: draining, excavation, channelization, flooding, clearing of vegetation, driving of pilings or placement of other obstructions, diversion of water, or other activities "which impair the flow, reach, or circulation of surface water, or which result in a more than minimal change in the hydrologic regime, bottom contour, or configuration of such waters, or in the type, distribution, or diversity of vegetation, fish, wildlife that depend on such waters."

In other words, S. 1304 focuses on the activity and the "addition or redeposit of dredged or fill material," while S. 1195 focuses on the impacts to water and water quality. The approach taken in S. 1195 is a much more logical approach for the Clean Water Act.

2. Current Corps regulations require that before development in a wetland is approved: 1) it must first be shown that there is no practicable alternative site for the project ("avoidance"); 2) any wetland impacts must be minimized if there is no alternative site ("minimization"); and 3) all wetland impacts that have been identified and minimized must be mitigated ("mitigation"). This three step process is known as "sequencing," and is based on a policy of preserving natural wetlands as a priority.

S. 1304 sets up a regulatory framework that will undermine the use of sequencing for the protection of wetlands. Basically, the bill implements the use of watershed management plans (i.e., watershed-wide planning) to obtain the goal of "no net loss." Part of the watershed management plan approach includes the use of restored wetlands through mitigation "banks," where the preservation or

restoration of an existing wetland may be used as mitigation for the loss of an existing natural wetland.

Since the only overall goal of watershed management plans is "no net loss," and restored wetlands may be used to mitigate losses of natural wetlands to achieve this goal, the overriding policy behind sequencing (i.e., the protection and preservation of natural wetlands as a priority), is lost. Under S. 1304, individual wetlands could be destroyed as long as there is an overall "no net loss" in a region, which may be satisfied as long as there is a plan for restored wetlands.

The Montana Audubon Council opposes this undermining of the use of sequencing for the protection of wetlands. In 1992 the National Academy of Sciences stated that, "It has not been shown that restored wetlands maintain regional biodiversity and recreate functional ecosystems..." (from, *Restoration of Aquatic Ecosystems*, National Academy Press, 1992). Because restoration of wetlands is, at best, uncertain; it is not appropriate to rely on mitigation - avoidance and minimization should always be the preferred alternative for any project.

If watershed management plans are to be used, sequencing needs to remain in tack: avoid, minimize and then (as a last resort!) mitigate.

The Boxer bill, S. 1195, maintains the current law which emphasizes preservation over mitigation, and recognizes that wetland restoration is yet an uncertain science with uncertain benefits. This bill codifies into law the current requirements relating to "avoidance," and maintains the current goal that all wetlands be accorded full protection, including appropriate and practicable mitigation. We support this approach.

3. Current law does not allow for the use of "mitigation banks." S. 1304 relies heavily on the use of mitigation banks and the restoration of existing wetlands to encourage the further destruction of natural wetlands. As noted by the National Academy of Sciences, "Wetlands restoration should not be used to mitigate avoidable destruction of other wetlands..." S. 1304 actually provides for taxpayer subsidies of wetlands destruction, by providing federal funds to private developers to set up mitigation banks. Similarly, the concept of mitigation banking appears to contain another taxpayer subsidy of wetlands destruction through allowing the use of government-funded restoration programs to serve as mitigation for private activities that destroy wetlands.

S. 1195, in contrast, does not allow for mitigation banks; it creates a pilot program for wetlands restoration to evaluate the long-term success of restoration efforts. Based on current knowledge and technology, this approach makes sense.

4. Recently, the Corps amended its rules to provide that wetlands converted to agriculture prior to 1985 are no longer wetlands. S. 1304 makes this the law, but seems to extend this exemption to all prior converted wetlands (i.e., not just before


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1985). Thus, with a stroke of the pen, at least 53 million acres of wetlands are no longer considered to be worthy of protection. Yet many of these wetlands, even though stripped of their natural vegetation, still serve important wetland functions. These lands can now be converted to other uses in addition to agriculture, such as shopping centers, subdivisions and other development.

The Montana Audubon Council feels that an appropriate balance needs to be struck in regards to prior converted wetlands. Please keep existing exemptions from regulation for farmers, but only for ongoing farming operations.

Thank you for the opportunity to comment on S. 1304. We are concerned about the protection of wetlands in Montana. At a current approval rating of 99.5% of Section 404 permits in our state. The current law needs to be strengthened to better protect these valuable, fragile, rare areas.

Sincerely,


Janet H. Ellis
Program Director



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Protecting Montana's Wetlands: An Overview of Montana's Section 404 Program

A Report by the Montana Audubon Council, October 1993

Executive Summary

Protection and enhancement of Montana's remaining wetlands is a priority issue for the Montana Audubon Council. Because of this commitment, we have researched and compiled the following report on Montana's 404 program, a critical program for wetlands protection.

This 32-page report looks at how wetlands are protected in our state under Section 404 of the Clean Water Act. It outlines why wetlands are important, Montana's wetland resources, the 404 program, and how the 404 program is working in Montana. The study covers the time period from January 1, 1989 to August 31, 1993.

For most of our country's first 200 years, "wetlands" were generally viewed with contempt. As a result, we waged a war to destroy these wet, tangled places. Now, as we have begun to understand the importance of wetlands, we have developed programs to protect these precious places.

Montana has lost approximately 27% of its original wetlands. Wetlands are rare in this state, making up less than 2% of Montana. They are also precious - for wildlife, flood control, and maintaining our high water quality.

The 404 Program

Section 404 of the Clean Water Act regulates the filling of wetlands. Under the Section 404 program, it is unlawful to fill wetlands without first receiving authorization (known as a "404 permit") from the U.S. Army Corps of Engineers (Corps).

There are three types of permits issued under the 404 program: individual, nationwide and general permits. The biggest projects regulated by the Corps are done through the issuance of individual 404 permits. Individual permits are the only 404 permits with any public involvement. The Corps also can authorize "nationwide" or "general" permits. These permits are granted for projects that the Corps believes will have minimal adverse effects on the environment. They are issued either on a nationwide basis ("nationwide permit") or on a regional or statewide basis ("general permit").

An Overview of Montana's 404 Permits

During the study, the Corps was involved with 1,756 permits, including: 1,333 (75.9%) nationwide permits; 240 (13.7%) individual permits; and 183 (10.4%) general permits.

Based on our review of individual files, only 9 of the 1,756 projects did not get approval by the Corps, for an overall approval rating of 99.5%. The report reviews the reasons that permits were denied and/or withdrawn.

Nationwide Permits

Currently, there are 36 authorized nationwide permits, 21 of which have been used in Montana since January 1, 1991.

Consistently, the most commonly used nationwide permit in Montana is # 26, relating to the filling of headwaters and isolated waters. During the review period, Nationwide Permit # 26 accounted for over one-quarter (25.3%) of all nationwide permit activity occurring in Montana. It allows the filling of up to 10 acres of: isolated wetlands, the headwaters of streams (under 5 cubic feet per second, average annual flow), and lakes.

The report details the problems with Nationwide Permit #26 in an arid state like Montana. We reviewed 132 of the 246 (54.0%) Nationwide Permit #26 files during the study period. Of those, only 36 files included any information on acreage. The total acreage of wetlands lost as reflected in these 36 files was approximately 18.5 acres.

General Permit

Currently there are 10 authorized general permits in Montana. The general permits that have been authorized cover such activities as boat ramp facilities, electric transmission lines, and water intake facilities.

Conclusions

The Montana Audubon Council's research demonstrates that 99.5% of all 404 applications are approved. Contrary to much of the rhetoric heard in discussions surrounding the Section 404 program, it does not significantly stop wetland filling activities in Montana.

A detailed look at the reasons why these permits were denied, showed that there was good cause for each denial. Additionally, the Corps has, whenever possible, worked with applicants to modify projects that face denial. These modifications appear to have improved the effectiveness of projects and reduced the damage done to aquatic ecosystems.

The most alarming part of our research surrounded the loss of wetlands under Nationwide Permit #26. Through the use of that permit, valuable Montana wetlands are being "nicked and dimed" out of existence. Under Nationwide Permit # 26, it is assumed that: 1) isolated wetlands under 1 acre in size (70% of a football field) are of no value; and 2) isolated wetlands under ten acres in size (7 football fields) are of limited value. In an arid state like Montana, these assumptions do not hold true for our small isolated wetland complexes, complexes that are often seasonal in nature.

Given the precious nature of wetlands - a resource that supports a staggering number of Montana's plants and animals, a resource that plays a critical role in flood protection, controlling water pollution, and protecting water quality - our research indicates that wetlands need more protection, not less.

For more information contact Janet Ellis, Program Director, at the Montana Audubon Council office.

Introduction

A great blue heron stands motionless, staring into the water. A painted turtle suns itself on the bank. A green-winged teal tips itself forward and submerges its head, looking for protein-rich insects. The wetland is alive and well.

For most of our country's first 200 years, "wetlands" were generally viewed with contempt. They were thought of as a threat to public health and a waste of productive space. As a result, we waged a war to destroy these wet, tangled places. Now, after 200 years of destruction, we have lost over half of all the wetlands in the lower 48 states. Montana is fortunate to still have approximately 73% of its original wetlands, occupying less than 2% of the state.

As wetlands disappeared, we began to recognize their value. Today many people believe that we cannot afford to lose any more of these precious places. Why? The answer is simple: wetlands are an important part of our natural environment that provide significant benefits to the public.

We first heard the battle cry for "no net loss" of wetlands four years ago. At that time, those words were believed to usher in a new era of wetlands appreciation. What we have found, however, is that these three words mean different things to different people.

Recently a group called the National Wetlands Coalition began a strong push for serious reform in the way that wetlands are regulated and protected. Contrary to what their name might indicate, this group is made up of organizations that want to develop - not protect - wetlands. Its membership includes multinational oil and gas interests, timber companies, real estate developers, agricultural interests, and others bent on developing wetlands. They claim that wetland regulations under Section 404 of the Clean Water Act place an unnecessary burden on the economy of our nation, and that these regulations need to be weakened. Legislation has been introduced in Congress to achieve their goals.

In Montana, the Montana Farm Bureau is one group that has joined the push to weaken Section 404 - at the same time admitting that the issue of wetlands regulation did "not affect Montana landowners as much as it affects other parts of the country...." (See *Wetlands — How Will They Affect Private Property Rights?*, Montana Farmer-Stockman, August, 1991).

Facing this declaration of war on wetlands regulations, the Montana Audubon Council decided to look at the facts surrounding Montana's 404 program; the rhetoric associated with the efforts to weaken the Section 404 program did not seem to be supported by any facts. The question we set out to answer was: how much of a regulatory burden is the Section 404 program in Montana?

After months of pouring over files and analyzing databases, we have decided to publish the results of our research. In this report we have outlined why wetlands are important, what kinds of wetland resources Montana has, a general description of the 404 program, and details on how the 404 Program is working in Montana. It is our hope that discussions in Montana about wetland regulations will now look at the facts - and not fictional rhetoric.

This study does not occur in a vacuum. Several pieces of legislation have been introduced in Congress relating to reform of Section 404. The bigger issue of reauthorization of the entire Clean Water Act will also be taken up in this session of Congress. The Montana Audubon Council will work

Montana is fortunate to still have approximately 73% of its original wetlands, occupying less than 2% of the state.

to ensure that the proposed changes to Section 404, and the Clean Water Act as a whole, correct problems in the current law, while maintaining adequate protection to preserve and enhance existing wetlands. The Council will also continue working to identify and clarify exactly what has and has not been problematic in Montana with the current law.

Why Are Wetlands Important?

Wetlands provide a major part of the habitat required to support a staggering number of creatures.

Perhaps the best known reason for wetlands protection is the importance of these areas as critical habitat. From pintails, great blue herons and tiger salamanders, to beaver, cattails and bog orchids, wetlands provide a major part of the habitat required to support a staggering number of creatures. The biological diversity supported by these precious areas in the arid West is beyond debate: wetlands provide some of the most productive wildlife habitat in our state.

Birds especially need wetlands. In Montana more than 50% of our bird species depend upon or frequent wetlands. For such waterfowl, wading birds, shorebirds, songbirds and others, wetlands provide important habitat for breeding, nesting, migration and wintering. Temporary wetlands, those areas that have water for only a short time in the spring, are critical for migrating birds; they provide birds with much needed food and resting areas on their long journey to nesting sites in the north. In addition, wetlands are also vital to all freshwater fish throughout their existence, for spawning, feeding or predator avoidance.

This bounty of species supported by wetlands provides another benefit in the form of outdoor recreation opportunities: according to the U.S. Fish & Wildlife Service, in 1985 over 141 million Americans participated in wildlife-associated recreation, spending 55 billion dollars. Those figures are growing each year. The majority of these activities depended upon the existence of productive wetlands.

In addition to providing important habitat, wetlands also provide other significant public values. They play a critical role in flood protection, controlling water pollutants, and maintaining water quality. At a time when the government and private sector are spending billions each year to address these problems, it seems "a pound foolish" to eliminate the natural features which provide these same services at practically no cost.

Wetlands act like a big sponge. During storms they collect and hold water, releasing it slowly over time. This action lowers flood peaks, slows water velocities, provides temporary water storage, and acts as a water filter for pollutants and nutrients. As suspended particles move through a wetland, they are held in the vegetation and soil. Toxic substances, including heavy metals, toxic chemicals and pathogens, are filtered out. Captured nutrients, including phosphorous and nitrates, are slowly returned to the water or are used by plants, thus stabilizing nutrient loads. The filtering ability of wetlands helps maintain - or even improve - water quality, including groundwater.

When adjacent to lakes and rivers, wetland vegetation can be invaluable for shoreline stabilization. Riparian vegetation absorbs and dissipates wave energy and captures sediments that are suspended in the water, reducing the amount of soil erosion from banks.

Wetlands play a critical role in flood protection, controlling water pollutants, and maintaining water quality.

Montana's Wetland Resources

Wetlands in Montana, while small in number and acreage, are critical areas for irrigators, homeowners, recreationists and scientists, as well as for wildlife and aquatic plant communities. Less than 2% of our state is occupied by wetlands.

It is worth noting that Montana, in comparison to other states, can apparently consider itself fortunate to still have approximately 73% of its original wetlands intact. When considered relative to the losses of our neighbors, however (South Dakota, 35% lost; North Dakota, 50% lost; Wyoming, 38% lost; Idaho, 56% lost, and; Minnesota, 43% lost), it is obvious that Montana's remaining wetland resources are extremely valuable and must be protected. The value of wetland resources in the otherwise arid West, where well over 50% of all wetlands have been lost (among all western states), cannot be overstated.

A glimpse of the remaining wetland resources in Montana is found in the *Regional Wetlands Concept Plan for the Mountain-Prairie Region*, published by the U.S. Fish and Wildlife Service, dated July, 1990 (*Plan*). According to the *Plan*, Montana contains a wealth of what are identified as "high priority" wetlands. These critical areas are defined as "rare, declining, and threatened wetlands providing a multiple array of benefits such as production and migration habitat for nongame migratory birds, as well as waterfowl; floodwater protection; environmental education and research; water purification; bird watching, fishing, hunting, and other recreation; open space in urban settings; and habitat for furbearers and resident game species."

Our priority wetlands include the prairie potholes in northeast Montana, subalpine meadows in the mountainous part of the state, small intermountain glaciated wetland complexes, western riparian wetlands, and isolated closed basins in central and south-central Montana. Of these types of wetlands, two (prairie potholes and western riparian wetlands) are among the nine identified wetland habitats nationwide of particular critical concern. In the *Plan*, losses of these two types of wetlands are described by the U.S. Fish & Wildlife Service as "severe."

Prairie Potholes

The prairie potholes in the northeast corner of the state are productive in every sense of the word. These wetlands vary in size from less than one acre to several hundred acres. Most of them are less than two feet deep and dry much of the year.

The "prairie pothole region" is widely recognized as the most significant "duck factory" in the lower 48 states. Common nesting species of waterfowl include mallard, northern pintail, gadwall, blue-winged teal, shoveler, redhead, canvasback, scaup and Canada goose. The typical wetland complex associated with prairie potholes provides optimum habitat for waterfowl reproduction and growth. Each part of the complex serves a distinct phase in the bird's nesting, breeding, and brood-rearing cycles.

These areas are also critical "resting" habitat for other waterfowl and shorebirds as they replenish protein and energy reserves to sustain them through migration and nesting. For this reason, seasonal and temporary wetlands in this region are invaluable to millions of arctic and subarctic nesting birds that pass through each spring.

Montana's prairie potholes and western riparian wetlands are among the nine identified wetland habitats nationwide of critical concern.

Over 225 species of birds are confirmed nesters in the prairie pothole region.

Over 225 species of birds are confirmed nesters in the prairie pothole region, many of which occur in Montana. This list includes nesting pairs of the threatened piping plover, endangered least tern, and the endangered bald eagle. These wetlands are also of critical importance to several endangered species during migration, including the whooping crane and peregrine falcon.

Wetland habitats in the prairie pothole region are also vital to many prairie mammals, which rely upon such habitats for both cover and a substantial portion of their food. Additionally, various Montana amphibians and reptiles also depend upon the prairie potholes, including the tiger salamander, rocky mountain toad, chorus frog, painted turtle and plains garter snake.

Finally, prairie pothole wetlands are the focal point in the hydrologic regime of the prairies. These wetlands store runoff water and serve as floodwater storage reservoirs by allowing water to "evapotranspire" to the atmosphere or slowly seep into the groundwater. While leaving prairie pothole watersheds intact will not necessarily prevent flooding in lower parts of a watershed, artificially draining these watersheds will make flooding problems worse. Prairie pothole complexes also play an important role in groundwater recharge or flowthrough, nutrient trapping, water quality, and the prevention of soil salination.

Western Riparian Wetlands

The western side of Montana also possesses many valuable wetland resources. In particular, the *Plan* describes western riparian wetlands as significant in terms of "resource values," and notes that in Colorado and Wyoming, about 90% of all wildlife species depend upon such riparian habitats, which account for less than 2% of the total land space in those states. It is likely that a similar conclusion can be drawn for Montana, which has essentially the same ratio of riparian habitat to land space.

Western riparian wetlands provide critical nesting and wintering habitat for bald eagles, as well as important seasonal or year-round habitat for a wide range of other resident wildlife, including deer, songbirds, upland game birds, small mammals, elk, moose and bear.

Western riparian wetlands also perform many important hydrologic functions such as ground-water storage and recharge of adjacent river systems and streams. These activities help to replenish connected aquifers, which provide water for irrigation, and supply late season instream flows which are important for water quality and fisheries. They also provide some degree of flood control and serve to reduce floodplain erosion.

Other wetlands in western Montana are also significant. For example, the small, intermountain glaciated wetlands in the Flathead Valley support the highest published density of nesting redhead ducks in North America. This fact becomes even more noteworthy when one considers that the U.S. Fish & Wildlife Service has reported that the 1991 redhead population was 6% lower than in 1990, and 26% below the 35-year average. As with prairie potholes, intermountain glaciated wetlands provide important habitat for a diverse number of species, including peregrine falcons, and provide critical wintering, nesting and migration habitat for bald eagles.

Many rare plant species in Montana are wetland-dependent. For example, Howell's gumweed (*Grindellia howellii*) occurs largely in the glacial potholes and old river oxbows of the Swan Valley. Other rare plant species dependent upon or associated with wetlands in the state include the yellow springbeauty (*Claytonia lanceolata* var. *flava*) and the sepal yellowcress (*Rorippa calycina*).

Finally, montane palustrine wetlands of the mountains of western Montana are identified for their important functional values in serving as "seeps" and "sediment traps." Both of these functions work to protect existing fish populations.

The small, intermountain glaciated wetlands in the Flathead Valley support the highest published density of nesting redhead ducks in North America.

The 404 Program: How it Works

An important role of Section 404 of the Clean Water Act is to regulate the filling of wetlands. In order to understand how well our wetlands are protected, it is important to understand which wetlands are protected under Section 404.

The Clean Water Act calls for restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. While retaining and strengthening existing water quality standards, the Clean Water Act also limits activities in "waters of the United States," including wetlands.

Section 404

Basically, Section 404 of the Clean Water Act helps protect wetlands by regulating the "discharge of dredged or fill material" into "waters of the United States." "Water of the United States" include all streams to their headwaters (5 cubic feet per second, average annual water flow); lakes over 10 acres; some isolated wetlands; and wetlands adjacent to waters of the United States. The "discharge of dredged or fill material" involves the physical placement of soil, sand, gravel, dredged material or other such material into waters of the United States.

Under the Act, it is unlawful to discharge dredged or fill materials into waters of the United States without first receiving authorization (known as a "404 permit") from the U.S. Army Corps of Engineers (Corps). Although the idea sounds simple enough, there are several important exceptions to the law that allow for the filling of wetlands.

Exemptions from 404

Not all activities in wetlands or waterways are subject to the Section 404 program. Congress has specifically exempted some activities from regulation, including normal farming, forestry, and ranching activities. To fall under these exemptions, the activities must be part of an on-going farming, ranching or forestry operation - and not associated with bringing a wetland into agricultural production or converting an agricultural wetland to a non-wetland area. Several years of disking, planting and draining can effectively dewater a wetland. Developers have used the "agricultural exemption" as a cover for converting wetlands for development.

Recently, the Corps determined that mechanized land clearing, ditching, channelization and excavation require a Section 404 permit. However, there are still several development activities that cause direct wetland damage that are not regulated under Section 404. These activities include the drainage of wetlands without excavation; lowering of groundwater levels; flooding of wetlands; and activities on upland areas that affect wetlands through soil erosion, pollution, or diversion of water.

404 Permits

There are three types of permits issued under the 404 program: **individual**, **nationwide** and **general** permits.

The application for a permit is two pages. The application requests information on the description, location, and purpose of the proposed project; the amount of fill or dredged material to be used in the project; a list of adjoining property owners; and a list of any other permits needed for

It is unlawful to discharge dredged or fill materials into waters of the United States without first receiving authorization (known as a "404 permit") from the U.S. Army Corps of Engineers.

There are three types of permits issued under the 404 program: individual, nationwide and general permits.

the project, including whether other permits have been approved or denied. Drawings of the described project may also be required.

Normally it takes two to three months for the Corps to process a routine individual permit. Less time is required to process applications for routine general and nationwide permits. It may take a longer time to process the application for larger and more complex projects.

Individual Permits

The biggest projects regulated by the Corps are done through the issuance of individual 404 permits. Individual 404 permits require that a public notice be issued on the project. The public notice contains information about the location of the project, the amount of fill to be placed, the amount of excavation proposed, and the purpose of the project. The public has 15 - 30 days to comment on a public notice. The notice is also reviewed by local, state and federal agencies at this time. If the project is large and controversial enough, a public hearing may be held on the project.

After the public comment period is over, the Corps examines the comments that have been submitted, and evaluates the impacts of the project. Based on the comments received, the Corps can work with the applicant to modify the project. Modifications are usually done to improve the effectiveness of the project and/or reduce the environmental impact of the project. After its evaluation, the Corps will then either approve or deny the application.

You may request that you or your organization be put on the mailing list to receive public notices of permit applications on the Missouri River, Yellowstone River, or throughout Montana. To do this contact the Army Corps of Engineers, 1520 East Sixth Ave., Helena, MT 59620-2301 (444-6670).

Nationwide and General Permits

The Corps also can authorize "nationwide" and "general" permits. These permits are granted for projects that the Corps believes will have minimal adverse effects on the environment. They are issued either on a nationwide basis ("nationwide permit") or on a regional or state-wide basis ("general permit"). An individual permit is usually not required of projects that fit the criteria of a nationwide or general permit.

Currently, there are 36 authorized nationwide permits, 21 of which have been used in Montana since 1991 (See Appendix III for the nationwide permits used in Montana). Nationwide permits cover such activities as small bank stabilization projects, the maintenance of previously authorized structures, and small hydropower projects. Probably the most controversial is Nationwide Permit # 26, which authorizes discharge of dredged or fill material in up to 10 acres of: isolated wetlands, the headwaters of streams (under 5 cubic feet per second, average annual flow), and lakes. Nationwide Permit # 26 thus exempts a wide variety of riparian areas, ponds and springs from permit scrutiny.

Currently there are 10 authorized general permits in Montana (See Appendix IV for the general permits used in Montana). The general permits that have been authorized cover such activities as boat ramp facilities, electric transmission lines, and water intake facilities.

Projects qualifying for a nationwide or general permit have no public notification or review process. State and federal agencies do, however, review some of these permit applications. A general or nationwide permit may be challenged, but only on the grounds that the project has "more than minimal adverse environmental effects, individually or cumulatively, or would be contrary to the public interest." In such cases, the Corps may use its discretionary authority to require an individual permit for these projects.

Nationwide and general permits, and their use in Montana, are discussed in more detail below.

Currently, there are 36 authorized nationwide permits, 21 of which have been used in Montana since 1991.

Currently there are 10 authorized general permits in Montana.

After-the-Fact Permits

The Corps may require an after-the-fact permit from anyone who has filled a wetland without a permit. The Corps may allow the fill to remain, with conditions, or may order the fill removed if the project does not meet the requirements for a permit. After-the-fact permits provide an opportunity to rectify unauthorized and/or damaging activities.

Approval Requirements

All 404 permits must follow certain minimum requirements before they can be approved. Among these requirements, projects must be "water dependent", meet certain public interest criteria, follow Environmental Protection Agency guidelines, and follow state water quality standards. Additionally, if the project can be completed by using a practical alternative that would have a less damaging impact on the aquatic ecosystem, then the less damaging alternative must be considered and, whenever possible, followed by the applicant.

Only projects that are "water dependent" can be approved under Section 404. The purpose of this requirement is to prevent the filling of a wetland if there is an upland site that the same project can be completed on. If the wetland does not have to be filled to accomplish the same result, the project cannot be approved. For example, a restaurant does not need to be placed in a wetland to fulfill its basic purpose of feeding people.

The public interest criteria considered by the Corps include conservation, economics, aesthetics, environmental quality, historic values, fish and wildlife values, flood damage prevention, land use, food production, recreation, water supply, energy needs, safety, and the needs and welfare of the public.

The Role of Government Agencies

The Section 404 permit program is jointly administered by the Corps and the U.S. Environmental Protection Agency (EPA). The Corps is responsible for processing permit applications, issuing or denying permits, and taking enforcement actions against permit violators.

The EPA has the authority to set the environmental standards with which the Corps must comply when issuing permits. It also shares enforcement authority with the Corps and is the final authority in regard to wetlands delineation (what is - and what is not - a wetland). Importantly, the Environmental Protection Agency also has veto power over a permit issued by the Corps, if it will have an unacceptable adverse impact on municipal water supplies, shellfish beds, fishery areas, wildlife, and recreational areas. Since the Clean Water Act was passed in 1974, the EPA has used this veto power on less than two dozen occasions in the United States, out of more than 150,000 permit applications filed under Section 404. There have been no EPA vetos in Montana.

State natural resource agencies also play an important role in reviewing and approving Section 404 permits that are considered by the Corps. Under Section 401 of the Clean Water Act, the state has the right to deny a proposed project if the project will impair Montana's water quality.

The Section 404 permit program is jointly administered by the Army Corps of Engineers and the U.S. Environmental Protection Agency. State natural resource agencies also play an important role in reviewing 404 permits.

An Overview of 404 Permits in Montana

This overview of Section 404 permit activity in Montana relates to all activities conducted during the review period that meet two criteria: first, the activity is conducted in Montana under Section 404, and; second, the activity was reported or otherwise tracked, authorized or permitted by the Corps. As noted below under the discussion relating to nationwide permits, the Corps is not required to receive notification for all activities conducted in wetlands.

During the period from January 1, 1989 to August 31, 1993, the Corps was involved with 1,756 permit applications. The following is a breakdown of the types of permits:

Nationwide Permits	1,333	75.9%
Individual Permits (or Amendments)	240	13.7%
General Permits	<u>183</u>	10.4%

Total Activity 1,756

Based on our review of individual files, 99.5% of all 404 applications were approved by the Corps - only 9 of the 1,756 projects did not get approval. Keeping this in mind, the "regulatory burden index" associated with the Section 404 program in our state is minimal. Clearly, the operation of the Section 404 program in Montana is not stopping proposed activities from occurring in jurisdictional wetlands.

Of the 1,756 applications processed during our study, 5 applications were denied and 24 applications were withdrawn. We examined these files individually to determine the reasons that these permits were denied or withdrawn.

A denied application did not always mean that a project could not proceed. Two of the five denied applications were subsequently authorized by the Corps under another type of permit: one of the denials was eventually authorized under a nationwide permit, and one was granted an individual Section 404 permit.

Of the 24 applications that were withdrawn, six may be characterized as withdrawn "in the face of likely denial by the Corps." Six of the remaining 18 applications that were withdrawn were subsequently authorized by the Corps under another type of permit: four of the withdrawals were eventually authorized under nationwide permits, one was later authorized under a general permit, and one was later permitted under Section 10 of the Rivers and Harbors Act. The remaining twelve applications that were withdrawn were the result of voluntarily action by the applicant, taken for a number of reasons, largely unrelated to the Section 404 regulatory program.

The reasons behind denial by the Corps and withdrawal by the applicant are varied, and are reviewed in greater detail in the following sections.

During the period from January 1, 1989 to August 31, 1993, the Corps was involved in 1,756 permit applications in Montana. Of those permits, 99.5% were approved by the Corps - only 9 of the 1,756 projects did not get approval.

404 Permits Denied in Montana

During the relevant time period of this study (56 months), there were only five Section 404 permit applications "denied" in Montana by the Army Corps of Engineers.

During the relevant time period (56 months), there were only five Section 404 permit applications that were "denied" by the Corps. Our review looked at all five of these files (Foss, Baugus, Burlington Northern, Valley Ditch, and Hathaway Ranch). Details on each of these applications can be found in Appendix I.

Three of the five applications were denied because the State of Montana did not certify the project under Section 401, meaning that the State believed the proposed project would result in a violation of Montana water quality standards (Foss, Baugus, Burlington Northern). Initially, the two remaining applications were also denied for lack of Section 401 certification, but State certification was later granted. As a result, Valley Ditch received an individual section 404 permit, and the Hathaway Ranch application was later authorized under Nationwide Permit # 13.

Although in each denied application the action of the State refusing Section 401 certification is the reason provided to the applicant for the denial, four of these projects were controversial in their own particulars, and in at least three of these projects there was clearly other grounds that may have served as a basis for denial. A short description follows:

In the Baugus application, the applicant sought to riprap property that he did not own on the Yellowstone River. The applicant had already received authorization from the Corps for a previous project and apparently had not completed that work in a satisfactory fashion. In addition, the applicant did not have the required 310 permit from the local conservation district.

In the Burlington Northern application, the applicant sought to construct a new railroad bridge on Stanton Creek, adjacent to the Flathead River. In addition to the water quality concerns of the Montana Department of Health & Environmental Sciences; the Montana Department of Fish, Wildlife & Parks expressed concerns regarding impacts upon migrating westslope cutthroat and bull trout; and the Montana Department of Highways was concerned that the proposed project would disrupt existing runoff and drainage patterns associated with the existing road. Both the Montana Department of Health & Environmental Sciences and the Montana Department of Fish, Wildlife & Parks asserted that an acceptable alternative was available to accomplish the project.

In the Foss application, the applicant proposed to use tires as riprap along the Missouri River. Concerns were expressed by the Environmental Protection Agency, U.S. Fish & Wildlife Service, and the Corps over the desirability and prospects for success of this proposal.

In the Valley Ditch application, the applicant sought a permit to perform required restoration work stemming from illegal fill activities on the Gallatin River. The applicant, without authorization, bulldozed a channel across the river, and was taken to court by both the local conservation district and the Montana Department of Health & Environmental Sciences. After the initial denial of Section 401 certification by the Montana Department of Health & Environmental Sciences, the restoration project was subsequently amended and approved.

In the Hathaway application, the applicant proposed to use concrete slabs on a river bank to prevent erosion. The Montana Department of Health & Environmental Sciences objected, noting that the proposed project involved placing a pollutant in a position where it was likely to pollute state

waters, and that the density of concrete was inadequate to sufficiently protect the streambank. Ultimately, the Montana Department of Health & Environmental Sciences granted Section 401 certification on a demonstration basis only, after requiring the applicant to permanently anchor pre-cast concrete slabs, and conduct monitoring and reporting.

404 Permits Withdrawn in Montana

During the study period, a total of 24 filed applications were subsequently withdrawn for various reasons. Of these applications, we were able to look at 23 of the files. The remaining file, relating to the application of Cops Construction, could not be located. Details on each of these applications can be found in Appendix II.

Withdrawal in the Face of Likely Denial

Although the process of withdrawing an application is a voluntary one undertaken by the applicant, in six of the cases the voluntary withdrawal was made by the applicant in the face of possible - or even likely - denial by the Corps [Griffel (2 applications), Auto Auction, Whitmer, Land & Lake Recreation, and Clothier].

In four of these files, the Montana Department of Health & Environmental Sciences had denied certification under Section 401, because it was anticipated that the proposed project would violate Montana water quality standards [Griffel (2 applications), Auto Auction, Whitmer]. In all four cases other grounds appeared to exist for denial by the Corps.

In the two Griffel applications, the projects involved placing rock jetties in the Yellowstone. The applicant had received a 310 permit from the Stillwater Conservation District for blanket riprap as opposed to rock jetties. Comments opposing the application because of the use of rock jetties were filed by the Montana Department of Fish, Wildlife & Parks; Environmental Protection Agency; and the U.S. Fish & Wildlife Service.

In the Auto Auction application, the applicant proposed to fill a slough adjacent to the Yellowstone River to provide space for parking. The previous owner of the property had filled adjacent wetlands under a previous Corps permit, but had not performed the required mitigation activities. In addition, both the Environmental Protection Agency and the U.S. Fish & Wildlife Service objected to the project as not water dependent.

In the Whitmer application, the applicant proposed to remove sand from an existing irrigation intake structure, and place the excavated material on a sand bar in the river. The U.S. Fish & Wildlife Service expressed concerns over nesting activities of the endangered least tern and threatened piping plover. The Environmental Protection Agency also expressed concerns in regard to the placement of excavated material on a sandbar within the high water mark, and noted that this was not a practical alternative for the discharge of dredged material. When the applicant did not respond to inquiries from the Corps regarding the status of the application, the application was deemed withdrawn.

In the application of Land & Lake Recreation, Inc., the applicant proposed to place fill on land they did not own at Noxon Reservoir. The Washington Water Power Company objected because the project would take place on company property and was not a long term solution to the identified

During the study period, a total of 24 filed applications were withdrawn for various reasons. Only in six cases was a permit withdrawn in the face of possible - or even likely - denial by the Army Corps of Engineers.

In six of the files that were reviewed, the application was withdrawn only to be authorized by the Corps under other permits.

problem. The Montana Department of Health & Environmental Sciences withheld certification under Section 401 until the water quality impacts and other alternatives could be further assessed. The Environmental Protection Agency objected as the applicant had not considered less damaging alternatives. The Montana Department of Fish, Wildlife & Parks objected because the project would cause further bank destabilization and siltation. The Montana State Historic Preservation Office raised concerns about historical sites.

Finally, in the Clothier application, the applicant proposed to use tires as riprap in a backwater of the Flathead River. Concerns were expressed by the Corps over the desirability and prospects for success of this proposal. Clothier was also denied a 310 permit from the Flathead Conservation District, and the project was cancelled.

Withdrawn But Authorized Under Other Permits

In six of the files that were reviewed, the application was withdrawn only to be authorized by the Corps under other permits. One project was subsequently authorized under Section 10 of the Rivers and Harbors Act (Nemitz), one project under a general permit (Junction City Ranch), and four under nationwide permits, including Nationwide Permit # 18 (Fort Peck Marina, Olson), Permit # 13 (Thomas), and Permit # 26 (Heckford).

Other Reasons for Withdrawal

Of the eleven remaining files that were examined: four projects were revised during the review process so that Section 404 permits were not required (City of Great Falls, Fox, Beaudette, Whitefish Lake Golf Course); two projects were withdrawn because of funding (Montana Power Company, Montana Department of Highways), although the Montana Department of Highways project was subsequently revised and authorized; two applications (Stepler, Schellinger Construction) were unable to secure other necessary approvals or agreements, unrelated to water quality concerns, and the projects were cancelled (a real estate easement, and a Forest Service permit, respectively); and three projects, that had faced little or no opposition, were cancelled for undisclosed reasons (Bilden, Urbani & Associates, Victor Land & Livestock).

As mentioned above, only one file, relating to the application of Copps Construction, could not be located. Records indicate, however, that the application was withdrawn on the same day that the Corps received it.

Nationwide Permit Activities

As described above, the Army Corps of Engineers may provide blanket authorization for certain activities in wetlands or waterways that the Corps believes will have minimal adverse effects on the environment. The permits may be issued on a nationwide basis, as nationwide permits, or on a local or regional basis (general permits). Currently, there are 36 authorized nationwide permits, 21 of which have been used in Montana since January 1, 1991. A description of the nationwide permits used in our state can be found in Appendix III.

A dramatic increase in the use of nationwide permits has been seen in recent years: 325 in 1991, 346 in 1992, and 300 (to date) in 1993. These figures are up from the previous high of 202 in 1990, and 156 in 1987.

Nationwide permits apply to a wide range of activities: from bank stabilization projects to small

hydropower. The various nationwide permits contain restrictions, conditions, and in some cases, notification procedures which must be met.

Who Reviews Nationwide Permits

The State of Montana, under Section 401 of the Clean Water Act, can either review or waive review of nationwide permits that may result in a discharge into waters of the United States. Currently, the Montana Department of Health & Environmental Sciences has waived certification on all nationwide permits except Nationwide Permit Numbers 12, 13, 16 and 26.

The Environmental Protection Agency (EPA) is the certifying agency for Indian Lands within the State of Montana. The Environmental Protection Agency has waived Section 401 certification for all nationwide permits except Nationwide Permit Numbers 12, 13, 15, 16, 17, 18, 23, 26, 32, 33, 40, and for any nationwide permit where the proposed activity involves the placement of wood timbers treated with chemical preservatives in a river, stream or adjacent wetland.

Anyone in Montana applying for a nationwide permit that is reviewed by the Montana Department of Health & Environmental Sciences or the Environmental Protection Agency [12, 13, 15, 16, 17, 18, 23, 26, 32, 33, and 40] needs to: 1) comply with all the requirements of the nationwide permit; and 2) obtain Section 401 water quality certification from the Montana Department of Health & Environmental Sciences or the Environmental Protection Agency.

As mentioned above, the Corps retains the discretionary authority to modify, suspend, or revoke nationwide permits for specific projects. If the Corps does this, the project is required to obtain an individual Section 404 permit. This may occur if an activity is determined to have more than minimal adverse environmental impacts (either individually or cumulatively), or would be contrary to the public interest.

During the duration of this study, no nationwide permit was denied by the Department of Health & Environmental Sciences, Environmental Protection Agency, and/or the Corps.

Montana's Nationwide Permit Activities

Less information is readily accessible on nationwide permits, than on individual and general permits. For this reason our research regarding the details of nationwide permits covers the time period from January 1, 1991 to August 31, 1993. During that time, nationwide permits were used in 971 separate occasions in Montana. The annual use of nationwide permits issued in Montana is detailed in Table 1 on Page 14.

Consistently, the most commonly used nationwide permit in Montana is # 26, relating to the filling of headwaters and isolated waters. During the review period, Nationwide Permit # 26 accounted for over one-quarter (25.3%) of all nationwide permit activity occurring in Montana (1991 — 25.5%; 1992 — 25.4%; 1993 — 25.0%).

Other significant areas of activity under the nationwide permit system include #3 (Maintenance), #12 (Utility Line Backfill and Bedding), #13 (Bank Stabilization), and #14 (Road Crossing), which when combined accounted for 57.0% of all nationwide permit activity during the review period (1991 — 63.1%; 1992 — 57.5%; 1993 — 53.0%). Aside from Nationwide Permit # 26, which is discussed further below, the activities conducted under these nationwide permits are self-explanatory (for example, Nationwide Permit # 12 is generally used for activities relating to utility lines). As a general rule, the Corps files contain no information on the size of the wetlands involved in these nationwide projects.

Nationwide Permit Numbers 14 (Road Crossings) and 18 (Minor Discharges) were used for a

During our study, nationwide permits were used in 971 separate occasions in Montana. Consistently, the most commonly used nationwide permit in Montana is # 26.

wide variety of projects. During the review period, there were 131 authorizations under Nationwide Permit # 14. After looking at over half (70 out of 131) of the Nationwide #14 files, approximately 31% involved government road projects, 26% were attributable to residential development, and 20%

Table 1. Nationwide Permits issued in Montana between January 1, 1991 and August 31, 1993.

Nationwide Permit	Year		Totals	%	
	1991	1992 *1993			
1 Navigation Aids	0	0	3	0.3%	
2 Artificial Channel Structure	1	0	1	0.2%	
3 Maintenance	80	49	38	167	17.2%
4 Wildlife Harvest Devices	0	0	1	1	0.1%
5 Scientific Devices	0	1	0	1	0.1%
6 Survey Activities	2	2	1	5	0.5%
7 Outfall Structures	0	0	1	1	0.1%
11 Temp. Recreation Devices	1	7	6	14	1.4%
12 Utility Line Fill	44	45	29	118	12.2%
13 Bank Stabilization	41	52	44	137	14.1%
14 Road Crossing	40	43	48	131	13.5%
15 Approved Bridges	0	1	0	1	0.1%
17 Small Hydropower Projects	0	1	0	1	0.1%
18 Minor Discharges	25	16	10	51	5.3%
19 Minor Dredging	3	2	4	9	0.9%
21 Approved Coal Mining	0	1	1	2	0.2%
22 Removal of Vessels	0	7	0	7	0.7%
23 Approved Exclusions	5	7	13	25	2.6%
26 Fill up to 10 Acres	83	88	75	246	25.3%
27 Restoration	0	17	11	28	2.9%
33 Temp. Construction	0	2	1	3	0.3%
36 Boat Ramps	0	5	13	18	1.9%
Totals	325	346	300	971	

* 1993 information covers the period between January 1 and August 31.

various governments (26%) and utilities (26%), and the majority of the utility activities involved the assessment of archeological sites. Other activities under Nationwide Permit # 18 included the construction of boat ramps and docks (16%) and various agricultural activities (13%). The remainder were the result of miscellaneous activities. Only one of these thirty-eight files contained any information regarding wetlands acreages: a track realignment by Burlington Northern along Whitefish Lake involved the disturbance of 0.05 acres of wetlands.

related to various agricultural activities. The remainder were the result of miscellaneous activities. Only one of these seventy files contained any information regarding wetlands acreages: an Environmental Assessment completed for a Federal Highway Administration project in the Bitterroot Valley noted that twelve separate wetland areas ranging in size from 0.1 to 3.4 acres would be impacted, for a total acreage of 7.8 acres; other wetlands would also be encroached upon. Some mitigation, by expanding existing wetlands, was anticipated for this project.

During the review period, there were 51 authorizations under Nationwide Permit # 18. After looking at most (38 files out of 51) of these, the majority of activities were conducted by

As a general rule, the Corps files contain no information on the size of the wetlands involved in nationwide projects.

Nationwide Permit Number 26

As described above, Nationwide Permit # 26 is the most commonly used nationwide permit in Montana. It allows the filling of up to 10 acres of: isolated wetlands, the headwaters of streams (under 5 cubic feet per second, average annual flow), and lakes.

In an arid state like Montana, wetlands, headwaters and lakes up to 10 acres in size are a valuable resource - especially when one considers that Montana's wetland resources are principally small in size: prairie potholes, glaciated potholes, montane palustrine wetlands, and the headwaters of all our streams.

To understand Nationwide Permit # 26, you must also understand what 10 acres - and one acre - means. For this reason, we compare these acreages to something found in almost every community in Montana: a football field. According to Webster's New Collegiate Dictionary, a football field is 130 yards by 53-1/3 yards or 6,933 square yards. One acre is 4,840 square yards, or 70% of one football field. Ten acres is 48,400 square yards, or the size of 7 football fields.

Nationwide Permit # 26 authorizes the filling of up to 10 acres, the size of 7 football fields, of isolated wetlands, headwaters or lakes. For this reason, we feel it is important to review in detail the activities completed under this nationwide permit.

For projects that involve the filling of less than 1 acre of wetland (70% of one football field), no notice or approval from the Corps is required. For acreages from 1 to 10 acres a "pre-discharge" notice is required. This pre-discharge notice requires a site check by the Corps, and a quick review of the project by necessary wildlife agencies. There is no public notice for any nationwide permit.

To get a feel for what kind of activity was occurring under this nationwide permit, we examined individual Nationwide Permit # 26 files. We were able to review 132 of the 246 files (54.0%) authorized during the study period. Of the 132 total, only 3 of the projects involved greater than one acre, and thus required "pre-discharge" notice to the Corps. The total acreage for these three projects was 6.24 acres. Since no notice to the Corps is required for projects involving less than one acre, it is anticipated that many projects conducted under Nationwide Permit # 26 are not even reported to the Corps at all, and are thus not reflected in their records.

The majority of Nationwide Permit # 26 activities (approximately 75%) reported to the Corps during our study involved "knowledgeable" participants (railroads, development corporations, consultants, government agencies, or work performed under the supervision of government agencies). Attempting to ascertain the extent of unreported activities under Nationwide Permit # 26 will be the subject of future research efforts. It is almost certain that the scope of unreported activity under Nationwide Permit # 26 is substantial. As an example, only one of the 132 projects that we looked at involved active mining activities; yet it is known that extensive mining activity in riparian and wetlands areas takes place in Montana. [See, for example, *Inventory of Placer Mining Effects on Stream Resources in the Vicinity of the Helena National Forest*, (Montana Department of Fish, Wildlife & Parks, 1987)]. Similarly, it seems intuitive that residential and commercial development should account for more than eleven of these files.

Of the 132 projects examined, 71 of these projects involved agricultural activities. Sixty-four

Nationwide Permit # 26 authorizes the filling of up to 10 acres, the size of 7 football fields, of isolated wetlands, headwaters or lakes.

of these projects involved creating watering areas for livestock, and the majority of these activities were reviewed and approved by the Soil Conservation Service. The Soil Conservation Service requires the Corps to be notified on all of its projects affecting wetlands, regardless of the wetland acreage that is involved in the project. The other 7 agricultural projects under Nationwide Permit # 26 primarily involved activities related to irrigation.

The remaining 61 projects may be further broken down into the following categories, which are largely self-explanatory: residential and commercial development (11); ponds (5); domestic water supply (1); active mining (1); reclamation (7); railroad and/or vehicle road projects (13); dam maintenance or construction (2); unidentified (1); and enhancement (20). As a general observation about the enhancement projects, many of them resulted in a "net gain" of wetlands. However, these enhancement projects also involved "trading" one wetland type for another (usually a pond is substituted for a wet meadow). According to the National Academy of Science, the success of wetland restoration efforts is, at best, uncertain. Given the uncertain success of these efforts, and the "trading" of one wetland type for another, it is difficult to quantify a true "net gain" for these projects.

As a general rule, the files of the Corps contain very little information regarding the activities that are conducted under any of the nationwide permits. The files for Nationwide Permit # 26 are no exception. When combined with the lack of reporting requirements under Nationwide Permit # 26, it is very difficult to generate any actual acreage estimates regarding the amount of wetlands that are being lost.

Of the 132 projects reviewed under Nationwide Permit #26, only 36 files included any information on acreage (including the 3 "pre-discharge" notices). The total acreage of wetlands lost as reflected in these 36 files was approximately 18.5 acres. Although acreage information was provided for only a few of the Soil Conservation Corps (SCS) approved stockwater projects, due to the similarity of these projects, it is possible to extrapolate the acreage lost by projects where no acreage information was provided. In general, the wetlands acreage lost as a result of these projects was estimated to be 0.1 acre per project. Multiplying this by the remaining 58 SCS stockwater projects for which no size information was provided, results in an additional 5.8 acres lost, for a "known" total of 24 acres lost under Nationwide Permit # 26.

Of the 132 individual files we were able to look at for Nationwide Permit # 26, 3 of the projects involved greater than one acre, and thus required "pre-discharge" notice to the Corps. The rest of the permits were under 1 acre in size.

General Permits

In addition to the nationwide permits described above, there are general permits issued in Montana. Some of these permits are issued on a district basis, others on a statewide basis, and still others on a waterway basis (for example, such as for the Missouri or Yellowstone River). Although the Corps records are somewhat unclear as to the total number of outstanding valid general permits, it appears that ten general permits (GP) are currently used in Montana. A description of the general permits used in our state can be found in Appendix IV.

During the time from January 1, 1989 to August 31, 1993, general permits were used in Montana on 182 separate occasions, with the number of authorizations ranging from a high of 54 in 1990, to a low of 29 in 1991 (1989 — 30; 1990 — 54; 1991 — 29; 1992 — 31; 1993 — 38).

Over the review period 78 (43%) of the general permit authorizations were granted pursuant to GP 89-03 (Habitat Improvement), 53 (29%) of the authorizations were under GP 82-10 (Boat Ramps), and 26 (14%) were under GP 90-01 (Water Intake Facilities on Fort Peck Reservoir). The remainder of the authorizations were scattered among GP 76-05 (Riprap) (8 permits), GP 79-03

(Electrical Transmission Lines) (1 permit), GP 87-02 (Fill for Boat Ramps and Docks on Flathead Lake) (2 permits), GP 88-01 (Mitigation Projects) (1 permit), 88-02 (Restoration Projects) (1 permit), 88-03 (Dams for Phase II and Phase III Waterways) (7 permits), and 89-04 (Existing Structures on Corps Lands) (5 permits).

The Montana Audubon Council's review of Corps' records did not include a review of the individual files associated with each general permit authorization.

Conclusion

Contrary to much of the rhetoric heard in discussions surrounding the Section 404 program, an overall approval rating of 99.5% does not support the claim that the program imposes a substantial regulatory burden.

One year ago, the Montana Audubon Council set out to answer the question: how much of a regulatory burden is the Section 404 program in Montana? After months of pouring over files and analyzing databases, the verdict is in - and the answer is a clear "No."

Currently, 99.5% of all 404 permit applications are approved. Contrary to much of the rhetoric, our research demonstrates that Section 404 of the Clean Water Act, as now written and enforced, has not significantly stopped proposed wetland development activities in Montana.

The two page application form for a 404 permit asks basic common sense information about each project. The application process requires individuals to stop and think and plan before filling a wetland. A detailed look at the reasons why permits were denied, shows that there was good cause for each denial. Additionally, the Corps has, whenever possible, worked with applicants to modify projects that face denial. These modifications appear to have improved the effectiveness of projects and reduced the damage done to aquatic ecosystems.

Given the precious nature of wetlands - a resource that supports a staggering number of Montana's plants and animals, a resource that plays a critical role in flood protection, controlling water pollutants, and protecting water quality - our research indicates that wetlands need more protection, not less.

Our research reveals that the most critical area where Section 404 needs to be strengthened is in the nationwide permit system. The most startling results of our research reveals that, through the use of nationwide permits, valuable Montana wetlands are being "nickel and dimed" out of existence. In Montana, the nationwide permit system is being loosely applied, in large part because of inadequate staffing levels in the local office of the Army Corps of Engineers. It is impossible for either the Corps, or a concerned public, to really know the extent of wetlands losses incurred by Montana under the current nationwide permit system.

The biggest problem with the nationwide permit system, is the assumption that generic nationwide permits fit Montana's wetland resources. For example, under Nationwide Permit # 26, it is assumed that: 1) isolated wetlands under 1 acre in size (70% of a football field) are of no value; and 2) isolated wetlands under ten acres in size (7 football fields in size) are of limited value. In an arid state like Montana, these assumptions do not hold true for our small isolated wetland complexes, complexes that are often seasonal in nature. Individually, these small, isolated wetlands are often the focal point for local biodiversity. Cumulatively, they network to provide critical habitat on a regional basis. They also significantly contribute to both flood control and water quality.

Montana is losing important wetland resources in a piecemeal fashion. Unless current regulations are changed, these precious areas will continue to disappear.



Ormond Beach Observers

DEDICATED TO THE PRESERVATION AND RESTORATION OF WETLANDS

August 2, 1993

Senator Bob Graham
Senate Environment and Public Works Committee
United States Senate
Washington, D.C. 20510

Dear Senator Graham and Committee Members:
Please enter this letter into the Record of your Committee's
hearings on the Clean Water Act.

Wetlands are an important element in our fragile ecosystem.
They provide nutrients for fish populations, migrating and
shore birds, shellfish. Over 43% of our nation's endangered
species are wetland-dependent--higher in California.

Our organization is comprised of 13 groups in Ventura County,
California, and our mission is to protect remnants of coastal
Southern California wetlands (part of the only 5% left in
the state). We believe that wetland protection is essential
to the environmental health of our country.

The midwest flooding of recent weeks has been attributed, in part,
to the lost wetlands (50% in recent years).

Senator Barbara Boxer has introduced legislation, S1195, which
strengthens the wetland protection now in place. We urge
you to support this bill and to encourage other senators to
join you giving a vote of confidence to the environment.

We would appreciate a response to our letter.

Thank you

Sincerely,

Roma Armbrust
Roma Armbrust, Chair
1151 Shelburn Lane
Ventura, CA 93001



Resource Development Council for Alaska, Inc.

121 West Fireweed Lane, Suite 250, Anchorage, Alaska 99503-2035
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SEC. 4. DEFINITION AND DELINEATION OF WETLANDS.

(a) DEFINITIONS.--

I. Amend the definition of jurisdictional wetlands so as to remove and reduce regulation of isolated, low habitat value wetlands.

II. Enact into law a definition of jurisdictional wetlands that incorporates the original 7th Circuit ruling on the Hoffman Homes case. This would exempt isolated wetlands from the reach of Section 404. Most coastal wetlands, as well as those along major rivers and streams, would remain subject to Section 404.

(b) DELINEATION OF WETLANDS.--

I. Devise a regulatory scheme for classifying and discriminating wetlands on the basis of function, value and abundance.

II. HIGH-LOW RANKING SYSTEM

Establish a national regime which classifies wetlands into high, medium or low-value categories. Provide that high-value, scarce wetlands remain subject to a strict regulatory regime akin to the present Section 404 program. At the other end of the spectrum, low value wetlands or wetlands of any value which are abundant would be granted more regulatory flexibility.

A further step would be to set up expedited permitting in those states which retain over 50 percent of the original wetlands in each category. A strict regulatory regime designed to aggressively protect remnant wetlands is not needed in areas where substantial wetlands remain.

III. Adopt a more moderate water dependency test which allows consideration of other factors such as the general character of the state's wetlands.

SEC. 5. REGULATION OF ACTIVITIES.**I. *ANCSA LANDS CONCERNS**

Section 404 unfairly diminishes the value and purpose of lands which were part of the federal government's aboriginal land claims settlement in Alaska. Alaska's Natives were promised 44 million acres, and the right to govern the use of these lands. It's important to consider that over 75% of the lands conveyed to the Native peoples of Alaska are defined as wetlands. As such, compensatory mitigation constitutes an unfair taking of Native lands in many respects.

Federal regulatory processes have eroded the right of the Alaska Natives to use their lands in a manner that will benefit them socially and economically. Reasonable opportunity for economic activity must be allowed to fulfill the purpose of the entitlements and the spirit of the accords. This problem should be corrected. Activities to build the necessary infrastructure to accommodate community economic development should be unhampered by excessive & extra federal regulation on native lands.

* (Alaska Native Claims Settlement Act)

SEC. 6. PERMIT PROCESSING IMPROVEMENTS.

I. Eliminate the concept of rigid sequencing embodied in the Army Corps of Engineers-EPA Memorandum of Agreement (MOA) so as to ensure flexibility in the consideration of mitigation proposals.

II. Require a broader focus on and consideration of public interests in the permitting process.

III. EXEMPTION FROM MITIGATION REQUIREMENTS

Under certain circumstances, a state could be exempted from the alternatives and compensatory mitigation steps of sequencing. Eligibility criteria for the exemption could be as follows:

- a. any state with X percent of its original wetlands still intact;
- b. any state that has X acres or more of protected wetlands;
- c. any state that has more than 50 percent of its lands in public ownership and more than X percent of those lands committed to conservation purposes; or

A variation would provide that only "high-value" wetlands in certain states remain subject to the alternatives analysis and compensation steps. All other wetlands within an otherwise eligible state would be exempt.

IV. RURAL COMMUNITY CONCERNS

More than 200 rural Alaska villages reflect Third World living conditions; basic human health needs must be elevated to priority status. Such a status is inhibited or prevented by Section 404 regulations. Basic infrastructure development such as potable water systems, roads, housing, schools, medical and transportation facilities, and basic sanitation systems require using land regulated as wetlands, and these problems will be exacerbated by strict regulatory practices.

SEC. 7. GENERAL PERMIT IMPROVEMENTS.

(3) STATE AND LOCAL PROGRAMS.--

I. Streamline the procedures and requirements for state/local assumption of program jurisdiction in general.

II. Specifically - State takeover with expanded flexibility

This option envisions inducing states to take over the Section 404 program by enabling them to run programs with fewer restraints than provided by current COE/EPA program. A qualified state program would preempt federal regulation, but individual permits would be subject to federal review or veto. COE/EPA would be barred from taking back the program unless they can affirmatively demonstrate that the state is failing to properly administer its program. *(For greater detail, a draft of legislative principles will be forwarded upon request.)*

III. Municipalities that have taken measures to limit urban sprawl and subsequent wetlands degradation should not be unduly burdened with stringent regulation, rather they should be given flexibility with regard to further development within the city. Cities that have localized growth and development, thereby limiting development in surrounding municipal areas, should be given flexibility in managing the remaining wetlands within the city.

For instance, a state which has one-third or more of its entire population living in any urban area should be granted extra flexibility in all categories of wetlands, since the net effect of such distribution is to preserve many more acres of wetlands in adjacent settings. Local land planning decisions in such areas should be given priority consideration in permitting decisions, since trade-offs of such a nature are greatly determined on a site-specific and community needs basis.

Additionally, any urban area as defined above, which surrounded by utilized wetlands, adjacent or contiguous, should receive regulatory relief from wetlands permitting since dry lands are scarce, and perhaps more biologically important, to ecosystem diversity in the area.

IV. Require that program modifications or reforms be accomplished through legislation or full administrative procedures, including public notice and comment.

V. Reform the Advanced Identification process so as to prevent its abuse at the expense of landowners and local governments.

SEC. 8. COORDINATION AND CLARIFICATION OF PROGRAM
CONCERNING AGRICULTURAL ACTIVITIES

(d) EXEMPTED ACTIVITIES.--

1. In clarifying what is meant by normal farming, RDC supports the addition of "haying" and "grazing."

Additionally, RDC recommends that the silvaculture language also warrants an addition to include "log storage, transfer and sort yards" which are obviously integral to "harvesting for the production of food, fiber, and forest products" as defined as exempted activities under this section.

SEC. 9. MITIGATION BANKS.

I. MITIGATION BANKING CREDIT

Compensatory mitigation would continue to apply nationwide, as would a prospective mitigation banking system. States which have contributed land to federal and state parks, refuges, preserves and wilderness areas would be provided an advance credit of X percent of the protected acres in the mitigation bank.

Any compensatory mitigation requirements attached to Section 404 permits would be deemed to be satisfied by debiting, on a like wetlands value basis, the advance mitigation credit. Only when that credit was exhausted would actual on-the-ground compensatory mitigation occur.


Alternatively, any state which has protected X percent of its wetlands could be entitled to mitigation banking credit of Y.

Alaska has more wetlands than all the other states combined (at least 170 million acres), and the least wetlands development of any state (less than one-tenth of one percent, or approximately 0.05%). When considering the amount of credit Alaska should be forwarded, it's crucial to consider that Alaska has contributed 62% of all federally designated Wilderness lands, 70% of all park land, and 90% of all wildlife refuge land in the national system.

Of the 170,000,000 million acres of wetlands within the State of Alaska, 62,335,685* million acres or 36.7% are protected in Federal & State Conservation Units. These millions of protected wetlands must be considered when establishing a mitigation banking system that affects Alaska. Alaska must be given credit for the wetlands already protected, otherwise there will be no incentive for other states to preserve wetlands.

- * This number along with all statistics outlined in the addendum were compiled by Robert Senner & Co. and RA Kreig & Associates, November 5, 1989.

Comments submitted September 30, 1993



Ken Freeman
Projects Coordinator

ADDENDUM

FEDERAL CONSERVATION UNITS WITHIN THE STATE OF ALASKA

Of 52,841,133 acres in the NATIONAL PARK SYSTEM within the State of Alaska, 12,372,846 or 23% are wetlands.

Of 457,000 acres in the NATIONAL WILD and SCENIC RIVER SYSTEM within the State of Alaska 176,250 or 39% are wetlands.

Of 22,869,467 acres in the NATIONAL FOREST SYSTEM within the State of Alaska 5,603,650 or 25% are wetlands.

Of 73,553,172 acres in the NATIONAL WILDLIFE REFUGE SYSTEM within the State of Alaska 41,228,620 or 56% are wetlands.

Of 2,220,000 acres in the BUREAU OF LAND MANAGEMENT SYSTEM within the State of Alaska 544,000 acres or 25% are wetlands.

• Of 151,940,772 acres in the TOTAL FEDERAL CONSERVATION SYSTEM within the State of Alaska 59,925,366 or 39% are wetlands.

STATE OF ALASKA CONSERVATION UNITS

Of 3,050,991 acres in the STATE PARK SYSTEM within Alaska 408,493 or 13% are wetlands.

Of 2,057,000 acres in the STATE FOREST SYSTEM within Alaska 374,700 or 18% are wetlands.

Of 1,065,308 acres in the STATE GAME REFUGE SYSTEM within Alaska 932,573 or 88% are wetlands.

Of 93,568 acres in the STATE GAME SANCTUARY SYSTEM within Alaska 8,870 or 9% are wetlands.

Of 841,940 acres in the STATE CRITICAL HABITAT SYSTEM within Alaska 685,682 or 81% are wetlands.

• Of 7,108,887 acres in the TOTAL STATE CONSERVATION SYSTEM 2,410,319 or 34% are wetlands.

• • • Of 159,049,659 acres in the TOTAL FEDERAL & STATE CONSERVATION SYSTEM within Alaska 62,335,685 or 34% are protected wetlands.

THE WILDLIFE SOCIETY

14 September 1993

The Honorable Bob Graham, Chairman
 Subcommittee on Clean Water, Fisheries, and Wildlife
 U.S. Senate
 SH-524 Hart Senate Office Building
 1 Washington, DC 20510-0903

Dear Mr. Chairman:

The Wildlife Society assembled a Wetlands Technical Committee to prepare the attached report, *MITIGATION BANKING AND WETLANDS CATEGORIZATION: The Need for a National Policy on Wetlands*, for your consideration in addressing wetlands conservation in the Clean Water Act. The Wildlife Society is the scientific and educational association of wildlife professionals dedicated to excellence in wildlife stewardship through science and education.

The Technical Committee consists of experts on wetlands from federal and state government agencies, academia, conservation organizations, industry, and private consulting. This diverse panel of professionals has voluntarily developed this paper in considering the best biological information available on the key issues of MITIGATION BANKING and WETLANDS CATEGORIZATION.

The Society urges you to consider a NET GAIN or NET RECOVERY of wetlands policy in recognition of the enormous historical losses and the importance and array of wetland functions and their inherent values to society.

We would be pleased to meet with you and/or participate in hearings related to wetlands conservation. Please enter this Technical Committee report in the official record of the 15 September hearing on this subject. The Wildlife Society Council will be considering the panel report for adoption at its meeting next week, and we will provide you a copy of the final document when it becomes available.

Thank you for your consideration.

Sincerely,

Thomas M. Franklin

MITIGATION BANKING AND WETLANDS CATEGORIZATION THE NEED FOR
 A NATIONAL POLICY ON WETLANDS

A REPORT FOR THE WILDLIFE SOCIETY

PREPARED BY: THE COMMITTEE ON MITIGATION BANKING AND WETLAND
 CATEGORIZATION

RICHARD D. CRAWFORD; ANN HODGSON HUFFMAN; MARY C. LANDIN; JOSEPH S. LARSON; JOSEPH A. MCGLINCY; DOUGLAS B. INKLEY; RONALD STROMSTAD; MILTON W. WELLER; DAVID E. WESLEY; AND DONALD A. HAMMER, CHAIR

SYNOPSIS

Wetlands represent a small fraction of our Nation's land area, but they harbor an unusually large percentage of our wildlife. Natural wetlands once occupied 11% of the 48 contiguous states and now occupy 5%—a loss of over 50%. Between the mid-1950's and mid-1970's, 700 miles² of wetland were altered and drained each year. The greatest losses were more or less equally balanced between the upper midwest (potholes) and the south (forested and coastal wetland).

An astonishingly rapid reversal of public attitudes and policy towards wetlands occurred during the last 20 years. Wetlands were considered wastelands and society encouraged wetland destruction and conversion with financial incentives. In the 1960's, Massachusetts passed protective legislation and many other states followed. On the national scale, incorporation in the 1972C1 Clean Water Act (CWA) was followed by the 1977 Executive Order leading to modifications in the Corps of Engineers (COE) regulations implementing provisions of the CWA, specifically Section 404. A number of states implemented similar regulations. Unfortunately, none of these efforts represent clearly defined national policy; hence, the confusion, controversy, costs and disenchantment with present approaches. In contrast to wetland drainage, we have not determined and codified a wetland protection/management policy.

Resolution of the present controversy is only possible through public discussion and consensus establishment of a national policy on wetland protection/management embodied in national legislation and unified implementing regulations. Anything less will simply perpetuate the current controversy and eventually undermine support for wetland protection. We need a broad national policy that reduces wetlands loss, restores drained or altered wetlands, protects wetlands through public or private ownership, and enhances wetland functions while accommodating desirable economic development.

The enormous historical losses and the importance and array of wetland functions, and their inherent values to our society, mandates that a national policy implement NET GAIN or NET RECOVERY of wetlands, until 25% of the original wetlands acreage has been restored and our combined wetland resource base is 75% of the original.

Natural wetlands are an ephemeral component of the landscape resulting from geological incidents and to a lesser extent, biological and human activities. Specific location, type and size of every wetland is dependent on a series of geophysical phenomena that created and maintain suitable hydrological and edaphic conditions at that site. Consequently, attempts to preserve every wetland or even to require on-site replacement are in fact attempts to maintain the status quo disregarding the series of unintentional events that created and maintain a wetland. This philosophy is inherent in rigid application of in-kind, on-site restoration/creation requirements of the COE/EPA MOA on mitigation signed in January 1990. In contrast, a strategic, landscape approach might well identify more suitable locations for certain types and sizes or even different types and sizes to enhance one or more functional values to society.

Unfortunately, fear of change has obscured serious consideration of arguments for strategic, landscape planning for wetland management that might increase values of wetlands through judicious location. It also has inhibited restoration of wetlands to their original form and function especially in the coastal regions where freshwater marshes have become saltwater marshes after the intra-coastal and associated canals permitted extensive salt water intrusion. Rigid attempts to maintain the status quo totally disregard historical conditions and man-induced changes, as well as the ever changing, dynamic nature of all wetlands.

Natural wetlands are interdependent and interact with terrestrial components of the landscape and with other wetlands, especially within a watershed or biotic region, such that meaningful management must incorporate a landscape, watershed or biotic region approach. Because of these strong interactions and interdependencies, it is not possible to evaluate, assess or categorize a wetland unit in isolation from other components in the watershed or biotic region. Wetlands management must also include temporal factors since age/successional stage, as well as geographical location, strongly influences both form and function of wetland resources.

The Committee believes that wetlands protective legislation should incorporate a philosophy that bases permit decisions on whether or not we can afford to lose a wetlands, not whether or not the wetlands can be replaced. This is an extension and endorsement of the current philosophy ("the sequencing rules") of:

- 1) encouraging wetland restoration whenever and wherever feasible and practical;
- 2) minimizing detrimental impacts to wetland form and function when avoidance is not feasible or practical; and
- 3) compensating detrimental impacts to wetland form and function when those occur.

We also recommend expanded planning level assessment by state and federal agencies to:

1. Improve and standardize application of current knowledge applicable to wetland evaluation
2. Encourage multi-disciplinary approaches to wetland protection/management;
3. Encourage systems approaches to wetland protection/management;
4. Improve agency consistency in the wetland permit review process; and,
5. Provide advance warning of wetland areas that will require extended review and mitigation.

Because poor scientific understanding of wetlands and their functional values has been an important contributing factor to conflicting attitudes and ambiguous approaches, we are convinced that major new initiatives must be undertaken, requiring substantial funding from public and private partnership, develop adequate knowledge upon which appropriate policies and regulations will be founded. Simply lack the essential information to correctly place wetlands in the landscape and to formulate a sound protection policy and implementing regulations. Consequently, a

national wetland policy must first provide financial resources to develop the requisite information base.

MITIGATION

Despite society's desire to protect remaining wetlands, some water-related projects are impossible without impacting wetlands. Therefore, regulations require compensatory mitigation of wetland impacts if the proposed development is approved. Compensatory mitigation has become a tool that expands the regulators' role from a simple yes or no to one of negotiated development.

Due to the broad scope and many interpretations of the term, we define mitigation as: replacement of the form and function of the wetland that will be detrimentally impacted.

Inclusion of function is important since current mitigation is largely based on replacement of wetland form, i.e., physical components of the impacted wetland. However, replacement of the major components may or may not replace wetland functions depending upon specific functions, wetland form, and spatial and temporal locations.

Numerous compensatory mitigation projects have failed, and these failures are commonly cited as reasons to deny the validity of the concept. Unfortunately, existing information is often not used in restoration, enhancement and creation projects. Failure of many projects lies with the lack of, or improper application of, existing knowledge. Too few developers employ experienced biologists in the design, construction and operation of wetland projects and subsequent failures are predictable.

Certain types of wetland—prairie potholes, midwestern marshes, salt marshes and some forested wetlands—have been successfully restored, enhanced and/or created, but our information on other wetland ecosystems is rudimentary. Similarly, our information on wetland functional values varies considerably. We have the ability to establish some life support functions—waterfowl, wetland mammal, fish and timber production—but only limited information on many other biological products, hydrologic buffering functions and water quality improvement functions. Our ability to replace functional values is limited because of our poor understanding of these functions.

Since compensatory mitigation projects attempting to create new wetlands have had widely varying success rates and because opportunities for wetland restoration or enhancement are finite, regulatory agencies should require natural wetland restoration or enhancement for mitigation rather than creation of new wetland. In situations where restoration or enhancement are not feasible, mitigation in the form of created wetland may be acceptable if:

- 1) documentation is available on the success of projects creating similar types of wetland in that region; or,
- 2) the permittee provides funding for research on similar natural wetlands in the region that would identify means by which the form and function of the impacted wetland could be duplicated in a newly created wetland; and,
- 3) the permittee insures that development of the new wetland is conducted under the direction of competent biologists employing current information or information obtained from studies on the model natural wetland;
- 4) the permittee agrees to provide for long-term monitoring to insure the new wetland is functional and self-perpetuating; and,
- 5) the permittee agrees to provide for long-term financial support through an irrevocable trust to ensure funding for necessary management.

MITIGATION BANKING

Existing regulatory delays and the inability of some developments to avoid detrimentally impacting wetlands led to proposals for establishing wetland banks to facilitate compliance with replacement requirements. Various groups have proposed establishing specific areas where wetlands are protected/restored/created and cooperating parties could receive "credits" for wetlands in the bank that would be used to offset liability for detrimentally impacting wetlands in a new development.

Current delays and lengthy regulatory processes reflect:

- 1) the complexity of wetlands and our inability to adequately evaluate functional values and insure replacement of form and function through mitigation; and,
- 2) inability of regulatory agencies to agree on and implement standardized permit processing procedures.

The present regulatory quagmire serves neither to protect wetlands nor their functional values, accomplish no-net loss or net-gain, nor to accommodate economic development in an orderly, cost effective manner. Present regulations, in some in-

stances, may contravene society's goals to protect and restore wetlands, and current wetland regulations need to have more latitude to encourage and support wetland restoration/creation projects by various organizations. Increased regulatory flexibility must include pro-active acquisition and long-term management if compensatory mitigation and mitigation banking are to protect and restore our Nation's wetland resources.

Economics are part of natural resources management and are certainly no reason to oppose the concept of wetland mitigation banks. Furthermore, opposition is no longer timely. Mitigation banks and banking programs are increasing almost exponentially. Preliminary results from the COE mitigation banking survey indicate existing banks had increased from 13 in 1988 to 20 in 1991 with at least 100 in active or planning status in 1992.

What impact do mitigation banks have on the Nation's wetland and wildlife resources and can current rigid regulatory applications be modified to achieve the goal of minimizing loss, and maintaining and restoring wetland functions? Do we achieve better quality management for wetland resources within the structure of mitigation banking than without it? Mitigation banking gambles that focusing efforts on fewer and more significant wetlands will have positive results for the landscape, even though centralization of those elements, and loss of peripheral elements, may have some negative effects.

Mitigation banking may have many positive as well as negative impacts on wildlife, wetlands and society and a summary of each is included the report. Wildlife scientists and managers must initiate a pro-active approach to mitigation and mitigation banking and develop guidelines that will respond to the needs of developers and accomplish a net gain in wetland resources. More over, the policy must increase wetland form and functional values and concurrently reduce and standardize regulatory requirements.

CATEGORIZATION

Classification and categorization are useful tools in ordering chaos. Wetland classification generally represents groupings of wetlands on hydrologic, biologic and edaphic characteristics without including value judgments. Categorization, however, implies grouping wetlands based on a value regime.

Value is determined by society and is not an inherent characteristic. Value has socioeconomic implications that go far beyond an assessment of presence or absence or even quantitative measurements. Valuation is also a function of time in that society's values change, and therefore the very same wetland could have a very different perceived value in the same society at a different point in time. If valuation schemes are employed to Categorize wetlands, evaluators must be able to estimate future values, as well as adequately assess present values, of existing wetlands. Furthermore evaluation of a wetland is inevitably related to time of year and age of system. Wetlands are dynamic ecosystems undergoing seasonal and annual change as well as progressive change over time, as the wetland system ages. Time, techniques and location of data collection can have substantial impact on the result of a one-time evaluation.

We recognize the importance of evaluation of natural resources as an important basis for land use decision making. Regulatory agencies now engage in wetland assessment as they decide what level of review is necessary when permits are filed. But the basis for this decision is not clear, interpretable or available to the permit applicant in advance.

A method of evaluating wetlands to determine the appropriate category for each individual wetland must be a key element of any categorization proposal. We are familiar with widely used evaluation methods (technical assessment tools). We do not believe that any existing evaluation regime is adequate to measure the value of each function performed by the myriad of types of natural wetlands in the U.S. Consequently, any attempt to evaluate and subsequently categorize natural wetlands with existing methodologies would result in irretrievable harm to the Nation's wetland and wildlife resources.

For the vast majority of wetlands and even for most different types of wetland, we lack quantitative information even on the biologic productivity, much less adequate, comparable information on other important functional values. We are aware of the potential costs of assessing the functions of individual wetlands; however, it is also clear that careful and costly study of watersheds is a prerequisite to designing flood protection programs. Wetlands must be included in similarly comprehensive watershed planning. Wetlands are providing important functions in maintaining water quality, reducing flood damage and conserving biological diversity, and their man-

agement requires an appropriate public investment in data collection and functional assessment.

We are concerned that some categorization proposals would allow for valuation/categorization by non-wetland professionals, i.e., developers or engineers. We do not believe that other disciplines are competent to evaluate wetlands or wetland functional values and we disagree with these approaches.

The Committee is concerned that certain proposals for categorization do not distinguish among several functions of wetlands, and lump values, such as flood control and wildlife habitat that have different biological and physical bases, into a few simple "value" classes. Schemes to put wetlands into nation-wide value classes without providing for any process to distinguish between regional differences are similarly suspect. In addition, some categorization proposals appear to have a strong element of triage, i.e., if wetlands were assigned to high (Type A), medium (Type B) and low value (Type C) categories, the Committee is concerned that wetlands in the low value category would receive less protection than they currently are provided, allowing development and subsequent loss of "low value" wetlands when in fact, their value is largely unknown.

Finally, high priority must be given to funding research to develop improved techniques and methodologies to quantify the functional values of wetlands and effects of wetland alterations. This research should develop an objective, quantitative, evaluation process that can be coupled with the National Wetlands Inventory. Similar research is urgently needed to improve methods to create compensatory wetlands that provide important wetland functions.

INTRODUCTION

Natural wetlands once occupied 11% of the 48 contiguous states but now occupy only 5%—a loss of over 50%. Wetlands represent a very small fraction of our total land area, but they harbor an unusually large percentage of our nation's wildlife. For example, 900 species of wildlife in the United States require wetland habitats at some stage in their life cycle, with an even greater number using wetlands periodically. Representatives from almost all avian groups use wetland to some extent and one-third of North American bird species rely directly on wetlands for some resource (Feierabend, 1989).

Between the mid-1950's and mid-1970's, a proximately 700 miles² of wetland were altered and drained nationwide each year according to the National Wetlands Inventory status and trends reports (Dahl and Johnson 1990). While losses were nationwide, most were more or less equally balanced between the upper midwest (pot-holes) and the south (forested wetland). Nineteen states lost over 50% of their wetlands and Ohio and California lost over 90%. A second status and trends report for the mid-1970's to the mid-1980's found a significant reduction in the loss rate, but losses continued at 300 miles² per year. During this period the largest losses occurred in the south (primarily forested but also coastal wetland). Most wetland losses were caused or induced by human activities.

The last 20 years have witnessed an astonishingly rapid reversal of public attitudes and policy towards wetlands. For over 100 years, public attitudes embodied in consensus policy, considered wetlands as "wastelands" and encouraged wetland destruction and conversion with financial incentives. But in the 1960's, Massachusetts passed legislation requiring a state permit for any alteration of wetland and many other states followed. On the national scale, growing public awareness of wetland values led to equivocal incorporation in the 1972 Clean Water Act (CWA) followed by the 1977 Executive Order but E.O.'s only apply to actions of Federal agencies. This however, led to modifications in the U.S.A. Corps of Engineers (COE) regulations implementing provisions of the CWA, specifically Section 404, see Appendix A. Later a number of states implemented similar regulations. Unfortunately, none of these represent clearly defined national policy; hence, the confusion, controversy, costs and disenchantment with present approaches. In contrast to wetland drainage, we have not determined and codified a wetland protection/management policy.

Reversing the drainage/conversion policy probably could not have been accomplished 20-30 years ago, but increasing public awareness and support are the basis for present concern over wetlands protection and the controversy surrounding wetland regulations. The Committee is convinced that resolution of the present controversy over wetland protection is only possible through adequate public discussion and consensus establishment of a national policy on wetland protection/management embodied in national legislation and unified implementing regulations. Anything less will simply perpetuate the current controversy and eventually undermine future support for wetland protection. We Need a broad national policy that addresses regulations and incentives to reduce wetland loss, protects wetlands through

public or private ownership, restores drained or altered wetland, and enhances wetland functions. Only a national wetland policy that repudiates previous conversion policies and encourages/compels wetland protection/restoration/creation/management will reverse continuing losses while accommodating desirable economic development.

The enormous historical losses of national wetlands and the importance and wide array of wetland functions and their inherent values to our society, mandates that we go beyond a national policy of NO NET LOSS of wetlands. We must implement a NET GAIN or NET RECOVERY of wetlands policy until such time as the combined wetland resource base approximates 75% of the original base. Since the present base is estimated at approximately 50% of the original, this would entail restoration of some 25% of the Nation's natural wetland acreages. And it will likely include creation of considerable wetland acreages since many former wetlands could be costly to restore. Many of our most important wildlife species are inextricably dependent on wetlands and diminished populations of these species are unlikely to be restored without restoration or creation of a significant portion of the wetland habitats they require.

Natural wetlands are an ephemeral component of the landscape that largely result from geological incidents and to a lesser extent, from biological and human activities. Specific location, type and size of every wetland is dependent on a series of geophysical phenomena that created and maintain suitable hydrological and edaphic conditions at that site. Consequently, attempts to preserve every wetland or even to require on-site replacement are in fact attempts to maintain the status quo disregarding the series of unintentional events that created and maintain a wetland on that specific site. This philosophy is inherent in rigid application of in-kind, on-site restoration/creation requirements of the COE/EPA MOA on mitigation signed in January 1990. In contrast, a strategic, landscape approach might well identify more suitable locations for certain types and sizes or even different types and sizes to enhance one or more of the functional values to society.

Unfortunately, fear of change has obscured serious consideration of arguments for strategic, landscape planning for wetland management that might increase the values of wetland through judicious location. It also has inhibited restoration of wetlands to their original form and function especially in the coastal regions where freshwater marshes have become saltwater marshes after the intra-coastal and associated canals permitted extensive salt water intrusion. For example, in Texaco's Bessy Height's field near Port Arthur, Texas, cypress stumps are still prominent in a saltwater marsh but the regulatory process discourages efforts to restore the original freshwater marshes. Required permitting contravenes the goal of restoring freshwater wetlands on sites where those wetlands previously existed despite the fact that salt water intrusion resulted from man-induced and not natural changes. Rigid attempts to maintain the status quo totally disregard historical conditions and man-induced changes, as well as the ever changing, dynamic nature of all wetlands.

Wetlands interactions and interdependencies in a watershed negate management approaches based on evaluating potential impacts to discrete wetland units. Current site specific approaches, especially regulatory measures, to wetland resources management are inadequate to conserve or restore the Nation's wetland and wildlife resources. Natural wetlands are interdependent and interact with terrestrial components of the landscape and with other wetlands, especially within a watershed or biotic region, such that meaningful management must incorporate a landscape, watershed or biotic region approach. Because of these strong interactions and interdependencies, it is not possible to evaluate, assess or categorize a wetland unit in isolation from other components in the watershed or biotic region. Wetlands management must also include temporal factors since age/successional stage as well as geographical location, strongly influences both form and function of wetland resources. For example, small isolated wetlands strategically located throughout a watershed may have considerably more value in terms of flood amelioration and water quality improvement than a single, large wetland at one position, even though it may be situated at the lower end of the watershed. Relatively, narrow bands of riparian vegetation may have inordinate importance as travel lanes for some species of wild life. Consequently, wetland resource management must include the context of the surroundings on a watershed, landscape or biogeographical unit basis.

In recognizing the complex of hydrologic, biologic, and edaphic components and processes that combine to create and maintain viable wetland ecosystems, the Committee recommends that management efforts and programs employ multi-disciplinary and system analysis approaches to insure adequate representation and evaluation of all aspects of wetland ecosystems. Managers must also incorporate cumulative/multiple impact assessments to wetland resources (and other natural resources)

within a hydrological or biogeographical unit since loss or damage to a single wetland could have serious repercussions to the functional values from remaining wetlands (and other resources) within the hydro/bio/geographical unit.

Because of the wide distribution and permeating impacts on world-wide public health, safety and welfare, wetland management must also adopt an international approach in developing a basic philosophy to reverse the loss of additional wetlands and instead, encourage restoration and replacement of previously lost wetlands throughout the world.

The Committee believes that wetlands protective legislation should incorporate a philosophy that bases permit decisions on whether or not we can afford to lose a wetland, not whether or not the wetlands can be replaced. This is an extension and endorsement of the current philosophy ("the sequencing rules") of:

- 1) encouraging wetland restoration whenever and wherever feasible and practical;
- 2) avoiding further loss or degradation of the Nation's wetland resources;
- 3) minimizing detrimental impacts to wetland form and function when avoidance is not feasible or practical; and
- 4) compensation of detrimental impacts to wetland form and function when those occur.

Wetland resource management must employ these approaches in descending order of priority, i.e., compensatory Impact mitigation is the last resort, to be implemented only when avoidance and minimization of impacts are not feasible or practical. Restoration or creation must not be used to mitigate avoidable destruction unless it has been thoroughly demonstrated that the replacement wetlands have equal or better form and function.

Where compensatory mitigation is required, acquisition of previous or degraded wetland and restoration, should take precedence over attempts at creation of new wetland because of the indifferent history of creation projects. Certain types of wetland may be relatively easily created, but our knowledge of many other wetland types is inadequate and numerous attempts to create these wetlands have been less than successful. Granted, failure of many projects was due to the lack of, or poor application of, existing knowledge—the developers lacked proper expertise (Erwin, 1991; Landin 192). And many other failures were related to overly ambitious goals or objectives, unrealistic time frames and/or inadequate resources. However, even successful creation projects will require continued maintenance/management for the foreseeable future. Unless responsibilities and resources are funded by long-term financial commitments, the end result may not be viable wetland ecosystems.

Changes in society's attitudes towards wetlands resulted from characterization and education on wetlands worth to the public, i.e., the quantitative and qualitative benefits that society derives simply because the wetland exists in that location. Benefits that result from the processes or functions carried out by the wetlands may have significant values. To create a direct linkage between wetland functions and value to society, we define functional values as: those products and effects resulting from the natural processes and functions of a wetland that have economic, educational, recreational and social impacts (positive and negative) on various segments of society.

Because poor scientific understanding of wetlands and their functional values has been an important contributing factor to conflicting attitudes and ambiguous approaches, the Committee is convinced that major new initiatives must be undertaken, requiring substantial funding from public and private partnerships, to develop adequate knowledge upon which appropriate policies and regulations will be founded. We reject arguments that it would be too costly to identify, categorize and classify all wetlands in order to implement wetland management policies. We believe that a complete understanding of all the functional values for each and every wetland regardless of size is unnecessary. None the less, our present knowledge base lacks the ability to evaluate important functional values for major wetland categories or to designate major interchange relationships within the landscape. We simply lack the essential ability to identify, describe, evaluate, and place wetlands in the landscape and to formulate a sound national policy and implementing regulations.

Previous failures to provide adequate funding for wetland inventory and research have been costly to society due to extensive loss of functional values and their economic benefits. For example, nonpoint source pollution is frequently cited as the largest remaining contributor to water quality problems, and improper resource management is identified as the culprit. Doubtless, poor land management is a factor, but rural land management is generally better today than 50 years ago when water pollution was less severe. Recently we have learned that 10-20 acres of constructed wetland can provide high level treatment for municipal wastewaters from

1000 residents for 10-50% of the \$3-4 million costs of conventional treatment systems (Hammer 1991). How much was the natural wetland worth before it was destroyed? And 100 year floods seem to occur at 10 or even 5 year intervals despite the fact that a much larger percentage of rural land is vegetated. Over harvest has been important in the depletion of fishery stocks but what has been the contribution of lost wetland nurseries? The critical element may well be natural wetlands that previously protected society from the ill effects of flooding and water contamination and provided the foundation for larger fish/food populations. Loss of natural wetlands has been costly to society and attempts to reverse those losses are unlikely to recover significant benefits without an adequate understanding of wetlands, their functional values and their importance in the landscape.

Significant increases in funding for:

- 1) research on functional values, including economic benefits;
- 2) landscape interchanges and interactions;
- 3) inventory;
- 4) classification and categorization; and,
- 5) wetland restoration/creation methods.

are critical to recovering financial losses to society caused by previous costly subsidies supporting drainage/conversion programs.

MITIGATION

Despite society's desire to protect remaining wetland resources through positive efforts to avoid and minimize wetland impacts (the sequencing rules), certain types of developments, such as water-related projects, are impossible without detrimentally impacting on-site wetlands. Therefore protective regulations include a third category requiring compensatory mitigation of wetland impacts' in cases where wetlands will inevitably be impacted if the proposed development is approved. Under current philosophies, compensatory mitigation must occur only after avoidance and minimization of impacts have been attempted. In its simplest form, compensatory mitigation allows the regulatory agency to say yes to development with a series of requirements. In that sense, mitigation is a tool that expands the regulators role from a simple yes or no to one of negotiated development. However, it is important to maintain our perspective. Mitigation banking is only applicable within the prescribed wetland regulatory process; at present non-regulatory wetlands (those built for other than mitigation purposes) account or 99% of all man-made wetland restoration and creation. Mitigation cure to the wetland loss problem. It is only one tool, in a bag of tools, that we have to protect/manage the nation's wetland resources.

Due to the broad scope and many interpretations of the term, the Committee defines mitigation as: replacement of the form and function of the wetland that will be detrimentally impacted.

This definition deliberately excludes the concept of minimizing harm from mitigation, though the latter often is included. We have deliberately avoiding specifying locations, acreages, creation, restoration, enhancement, etc. in an effort to simplify the definition because we recognize that full replacement may be accomplished through a variety of means. Since our charge is to evaluate impacts of mitigation banks on wildlife and wetlands, we chose to restrict the definition and limit our discussion to the concept.

Our inclusion of function within the above definition is important since we believe that current mitigation is largely based on replacement of wetland form, i.e., the physical components of the impacted wetland. However, replacement of the major components may or may not replace the wetland functions depending upon the specific functions, the wetland form and spatial and temporal locations. However, given that definition, we must then examine the viability of the basic approach to replacement. Since mitigation assumes that the form and functions of the wetland can be replaced, a review of wetland functions may be useful.

Important functional values deriving to human societies from natural wetlands include:

ground-water recharge, ground-water discharge, floodwater alteration, sediment stabilization, sediment/toxicant retention, nutrient removal/transformation, production export, aquatic and wildlife diversity/abundance, storm buffering, recreation and uniqueness/heritage (Adamus, et al 1991).

This list may be grouped into four major categories:

- 1) life support;
- 2) hydrologic buffering;
- 3) water quality improvements; and,

4) historical/cultural significance.

Because wetland functions are controlled by physical, chemical and biological processes, wetland functions are strongly related to complexity, pristiness (diversity), size and location of the wetland as follows:

	Complexity	Pristine	Size	Location
Life Support	High	High	High	Mod
Hydro Buff	Low	Low	Mod	High
W Q Improve	Low	Low	Low	Mod
Histor/Cult	Low	High	Mod	High

Life support is largely biological though obviously dependent on physical and chemical processes. It has moderate site dependency with moderate to high size, complexity and pristine dependency. It includes production and maintenance of flora and fauna—forbs, grasses, shrubs, trees, fungi, invertebrates, birds, mammals, fishes, herptiles, and microbial populations that are valued for commercial products and recreation.

Hydrologic buffering is largely a physical function that is extremely site dependent and highly size related. It includes flood amelioration such as flood water storage/retention, i.e., desynchronization and reductions in magnitude of downstream flows reducing flood water damages during unusual storm events. Conversely, delayed discharges of flood waters augment base flows in rivers and streams supporting diverse aquatic life in our waterways. In some instances wetlands can have an important groundwater recharge function, supplementing other mechanisms to increase total ground water resources. Natural wetlands protecting and supported by groundwater discharge can provide important surface water sources and of course, some wetlands have essentially flow-through groundwater patterns (Clark and Benforado 1981, Gosselink et al 1990, Gosselink and Turner 1978).

In the water quality improvement function, chemical and physical processes tend to dominate biological processes. This function has moderate site dependency and lower size, complexity and pristine dependency. It includes removal of pollutants/contaminants from in flowing waters—principally surface flows—but it can also include subsurface inflows—to purify natural water supplies. Principle actions include (Faulkner and Richardson 1989):

- 1) chemical—oxidation, reduction, cation exchange, adsorption, precipitation;
- 2) physical—sedimentation, filtration, precipitation; and,
- 3) biological—microbially mediated reactions, assimilation/uptake, nutrient recycling.

The historical/cultural preservation function is highly site specific and strongly related to natural condition but only moderately related to size and complexity of the wetland. It includes preservation of anthropological and historical resources.

Physical and chemical processes are much less dependent upon complex, diverse and perhaps pristine wetland. A very simple or severely degraded system may have important hydrologic buffering value and/or water quality improvement values but little or no life support value. Generally, life support values increase with increasing complexity and proximity to natural conditions. However, a simple wetland (low diversity/complexity) can have very high productivity for certain products. A small system (perhaps 0.1 ha) may have important water quality improvement values but little or no flood amelioration or life support value. Exceptions include very small systems that provide habitat for unusual or threatened or endangered species. Moderate size (> 2 ha) systems may have significant hydrologic and life support values and increasing size is related to increasing importance for these values. Obviously, location in the watershed is extremely important to the hydrologic buffering function and moderately important to water quality but may be much less important to the life support function. Location in a state, region, country or continent may be quite important to the life support function, however.

Numerous compensatory mitigation projects have failed, and these failures are commonly cited as reasons to deny the validity of the concept. Given the broad variety of wetland types, their geographic distribution, and diverse nature of wetland functional values, generalizations are fraught with peril. This is especially true for

smaller wetlands and unique types with isolated distributions. Furthermore, the interrelationships of wetland units within a geographic area and their interdependencies on associated terrestrial environments, make evaluations of replacement difficult at best. However, certain types of wetland have been restored, enhanced and/or created for many years. We have a considerable body of knowledge on restoration, enhancement, creation and management of marshes—especially the Prairie Potholes and other midwestern marshes. Similar though less extensive information is available for freshwater marshes in the interior valley of California, the Intermountain West and coastal marshes along the Atlantic and Gulf coasts. Some information is available for northern bogs, less for Coastal Plain bogs and very little for high elevation bogs. Our information on forested wetlands, especially the great river swamps of the Southeast is rudimentary at best and it's almost non-existent for unique systems such as pocosins, vernal pools, riparian bands, Carolina Bays, etc.

Similarly, our information base on wetland functional values varies considerably. We have the ability to accomplish certain life support functions—notably waterfowl, wetland mammal, fish and timber production but only limited information on the host of other biological products deriving from wetlands. Very few investigations have explored the hydrologic buffering functions and results have been multi-directional. The water quality improvement function has received considerable attention within the last few years but much of the information has derived from deliberately constructed wetlands and extrapolation to natural wetlands is largely unknown. Consequently, our ability to replace functional values, with a few exceptions, is limited because of our poor understanding of these functions. We do not believe that the state of the art for functional values is adequate to enable us to replace these functions in most newly created wetlands.

Unfortunately, existing information is often not used in restoration, enhancement and creation projects. Failure of many projects lies with the lack of, or improper application of, existing knowledge. In most cases, problems are caused in application not by the science. Too few developers employ experienced biologists in the design, construction and operation of wetland projects and subsequent failures are predictable.

Since compensatory mitigation projects that attempted to create new wetlands have had widely varying success rates and because opportunities for wetland restoration or enhancement are finite, regulatory agencies should require natural wetland restoration or enhancement for mitigation rather than creation of new wetland. Our emphasis on restoring former or prior-existing wetland is pragmatic in that, in many cases, restoration of damaged or degraded wetland is much more likely to succeed than attempts to create a wetland in a formerly terrestrial environment. Quite simply, the residual hydrology, edaphic and biological components in the previous wetland make it possible to restore the wetland simply by removing or modifying the factors causing degradation.

In situations where restoration or enhancement are not feasible, mitigation in the form of created wetland may be acceptable if:

- 1) documentation is available on the success of projects creating similar types of wetland in that region; or,
- 2) the permittee provides funding for research on similar natural wetlands in the region that would identify means by which the form and function of the impacted wetland could be duplicated in a newly created wetland; and,
- 3) the permittee insures that development of the new wetland is conducted under the direction of competent biologists employing current information or information obtained from studies on the model natural wetland; and
- 4) the permittee agrees to provide for long-term monitoring to insure the new wetland is functional and self-perpetuating.

Although various agencies and individual offices of these agencies have developed replacement acreage requirements, the Committee is reluctant to delve into that morass. Suffice it to say, that replacement of functions for an individual wetland could easily require replacement at ratios greater than 1:1 depending upon the functions and the time period during which the replacement is expected to be accomplished.

MITIGATION BANKING

The complex web of regulations and the inability of some developments to avoid detrimentally impacting wetlands has led to the concept of replacing wetland in various forms or systems. Costs for complying with current regulations and uncertainties over permit delays and/or approvals have encouraged proposals for establishing banks of protected/restored/created wetland that could facilitate compliance with the replacement requirements. In a further attempt to expedite regulatory re-

views various groups have proposed establishing specific areas where wetlands are protected/restored/created and cooperating parties could receive "credits" for wetlands in the bank that would be used to offset their liability for detrimentally impacting a wetland in a new development. Developers, often caught in a confusing, seemingly interminable web of unknowns related to potentially impacting a wetland as part of their overall development proposal, are leading advocates. And it is understandable that developers seek a simplified solution; many simply ask that they be told what it will cost and when a permit will be issued so they can factor the delay and cost into their project planning.

However, current delays and lengthy regulatory processes reflect:

- 1) the complexity of wetlands and our inability to adequately evaluate functional values and insure replacement of form and function through mitigation; and,
- 2) inability of regulatory agencies to agree on and implement standardized permit processing procedures.

The present regulatory quagmire serves neither to protect all wetlands or their functional values, accomplish no-net loss or net-gain, nor to accommodate economic development in an orderly, cost-effective manner. Some would say that the current regulatory approach fails to provide adequate protection while others fault the interminable, costly delays and inability to plan developments. Others cite the continued, often piecemeal, loss of thousands of acres of wetland and our failure to implement no-net loss on a local, regional, state or national basis much less accomplish any improvements in restoring wetlands and their functional values. Many examples of disparate implementation of regulations have also been articulated. Forceful arguments can doubtless be made for both sides of the issue. The present controversy regarding wetland protection is not surprising given the short time period for an almost complete reversal of a long established drainage policy. But our poor scientific understanding of wetlands has also been a contributing factor.

Economics are part of all natural resources management and are certainly no reason to oppose the concept of wetland mitigation banks. Furthermore, opposition is no Mitigation banks and banking programs are increasing almost exponentially and developers are leading the efforts while environmentalists often find themselves on the outside in opposition. A progress report on the COE mitigation banking survey (IWR 1992) showed that existing banks had increased from 13 in 1988 to 20 in 1991 with at least 100 in active or planning status in 1992. The survey identified 37 existing banks with 64 planned banks that were expected to become active in 1992, and an additional 5 mitigation trusts. Of the existing banks, 38% are on the west coast, 27% in the northern plains, with 16% in each of the mid Atlantic and Gulf regions. Highway construction projects were involved in 60% of the banks and port (14%) and industrial development (11%) were the next most common. States exclusively own 50% of the banks, 20% are privately owned, and local public bodies and federal ownership account for another 20%. The largest was 7000 acres but only 15% were >640 acres, while 51 were >40 acres and only 5% were <10 acres. Over two-thirds were located in the same hydrologic unit.

The relevant question now is what impact do mitigation banks have on the Nation's wetland and wildlife resources and can current rigid regulatory applications be modified to achieve the goal of minimizing loss, and maintaining and restoring wetland functions. Do we achieve better quality management for wetland resources within the structure of mitigation banking than without it? A mitigation bank, in its Usual form, gambles that focusing efforts on fewer and more significant wetlands will have positive results or the landscape, even though centralization of those elements, and loss of peripheral elements may have some negative effects.

The effects of mitigation banking on wildlife, wetlands and society, have positive and negative aspects. Mitigation banking pluses include:

- 1) alternatives for improving quantity of high quality wetlands as well as acquisition and management opportunities
- 2) opportunities for restoration of degraded wetlands;
- 3) increased diversity and isolation for wildlife species;
- 4) scale, size and location improvements if regulators and developers are required to employ a landscape
- 5) preservation of existing habitats through acquisition and management;
- 6) better adherence to fish and wildlife needs;
- 7) exploits new management opportunities and approaches;
- 8) potential for a net gain of wetland if creation is successful;
- 9) better technical and professional expertise are likely to be available on larger projects;

- 10) greater involvement and possible cash flow for owners of lands that now have little market value;
- 11) facilitates conflict resolution;
- 12) reduced delays encountered by developers; could provide clear direction to developers and enhance their ability to estimate total project costs; gives developers a degree of certainty in terms of permit approvals and timing so they can deal with banks, other funding sources and planning agencies; could be seen as positive effort by environmentalists to work with developers; and, could positively influence developers attitudes towards wetlands and wildlife in general;
- 13) mitigation banking could create greater acceptance and understanding in the regulated community of wetland functions and values that might encourage deliberate use of created/constructed wetlands in development projects.

Mitigation banking negatives include:

- 1) converting to wetlands can cause loss of other habitats especially certain terrestrial habitats.
- 2) influencing the natural distribution of wetlands;
- 3) altering types of wetlands;
- 4) altering functions of wetlands;
- 5) impacting size (including sacrificing many small wetlands for one large wetland);
- 6) increasing regulatory requirements;
- 7) potential losses of wetland since enforcement in mitigation banks has been poor or lacking;
- 8) potential losses due to lack of long-term funding. Many projects lack provisions for management and funding in perpetuity; can guaranteed, long-term funding be provided and who will be responsible for long term management?

The Committee believes that wildlife scientists and managers must initiate a proactive approach to mitigation and mitigation banking and develop guidelines for mitigation and mitigation banks that will respond to the needs of developers and accomplish a net gain in wetland resources. Developing and promoting a program/policy to enhance the positive resource aspects of banking while reducing the negative we an impacts and improving regulatory conditions for developers could become a win-win situation. However, the policy must increase wetland form and functional values and concurrently reduce and standardize regulatory requirements. The Institute of Water Resources Survey currently underway is likely to provide additional information in the near future. However, in the interim, the mitigation banking policy should include:

- 1) recognition that the basic precepts of mitigation banking are:
 - economic and development driven
 - permit driven
 - not altruistic
 must deal with areal scale
 - ownership (covenant codes and restrictions)
 - administration
 - continuity
- 2) national guidelines and oversight as part of a national wetland policy;
- 3) regional modifications/specifics;
- 4) state or regional level decision making and implementation;
- 5) administration by joint private/state/federal consortia established for that specific purpose. Mitigation banks must be established and managed by cooperative agreements among various organizations and not necessarily controlled by government. COE and EPA are unlikely to actually manage banks, but will only regulate them. On the other hand, many existing private organizations could provide long-term management and new consortia of private and governmental organizations could be established for the specific purpose of providing funding and management in perpetuity. We must develop means to provide for permanent protection and management of wetlands in any mitigation bank;
- 6) compensatory mitigation should include ecological equivalency as a specific goal including replacement/increase of form and functions;
- 7) compensatory mitigation should include landscape, watershed and hydro/bio/geographical evaluations;
- 8) general guidelines on within-kind vs out-of-kind, within-site vs off-site, near- or far-site, in- or out-of biotic/hydro/geographic region that are designed to increase the acreages, form and functional values of wetland that will be refined at state or regional levels;

- 9) establishment of escrow/trust funds or other means to ensure funding for full implementation and long term management; funding of the mitigation bank must not be susceptible to company failure/bankruptcy or reorganization;
- 10) improved methods/means to provide, record and monitor mitigation credits, including guidelines for third party brokering of mitigation credits;
- 11) less regulatory attention to the permit that leads to a decision of "yes, you may develop this wet following mitigation stipulations," and more followup on what was actually done. Federal agencies have done a very poor job of monitoring wetland permit compliance once the permit was grant.
- 12) reduced regulatory requirements to improve opportunities for net gain to wetlands and wetland resources.
- 13) requirements for incorporation of wetland science with careful, conscientious planning and construction for any mitigation projects to reduce the amount of poor planning and execution.
- 14) requirements that mitigation is in place and functioning, concurrent or a priori other aspects of the project. Current regulations are largely tied to the same time line as the developer's project. Regulations must have the flexibility to allow for accumulation of mitigation credits in banks prior to and/or concurrent with loss of the natural wetland. In to many instances, developer's cash flow problems have caused mitigation failures. In other cases, a priori mitigation may be necessary to insure that mitigation projects will succeed before the development is initiated.
- 15) guidelines on locations, type, size and establishment of mitigation banks including how acreages/form/function are established/accepted in the banks;
- 16) clear, quantifiable goals must be set for each of the mitigation banks; goals that have measurable outputs.
- 17) each mitigation bank plan and program must contain a monitoring and evaluation plan and funding to achieve that plan.
- 18) application of mitigation banking credits must be such that credits are not transferable from one project to another without adequate evaluation by qualified professionals. This seems to be occurring in the Upper Yazoo Basin Restudy Effort by the COE. Apparently, the COE has indicated that they have "over mitigated" in the Upper Steele Bayou project (located in the Mississippi Delta) by some 12% and plan to move these "excess" credits to the Upper Yazoo project (also Mississippi Delta) for mitigation application. While this may result in acceptable mitigation in these two comparable drainages, the practice certainly requires scrutiny.
- 19) recognition that education is an important goal of mitigation not only for the public but for specific user groups and resource managers. Also recognition that wetlands are not only important in terms of wildlife but for many other functional values.

Present regulations, in some instances, may contravene society's goals to protect and restore wetlands and current wetland regulations need to have more latitude to encourage and support wetland restoration/creation projects by various organizations. Increased regulatory flexibility must include pro-active acquisition and long-term management if compensatory mitigation and mitigation banking are to protect and restore our Nation's wetland resources.

An example of an active mitigation banking scheme—North Dakota's no net loss of wetland law—is described in Appendix B.

CATEGORIZATION

Classification and categorization are useful tools in ordering chaos whether the subjects are insects, stamps, job descriptions or wetlands. Wetlands classification is generally understood to represent groupings of wetlands based on their hydrologic, biologic and edaphic characteristics without any attempt to include a value judgment on one group or another. Categorization, however, implies grouping wetlands based on some form of assigned value regime.

Valuation or determining/assigning values by nature must include by whom, for whom, and for what purpose. The value of something is determined by society and is not an inherent characteristic, i.e., flood alteration function of a specific wetland could have significant value to a downstream community yet lack any value to an upstream community. Value has socioeconomic implications that go far beyond an assessment of presence or absence or even quantitative measurements. Valuation is also a function of time in that society's values change, and therefore the very same wetland could have a very different perceived value in the same society at a different point in time.

The Committee recognizes the importance of evaluation of natural resources as an important basis for making decisions concerning land use. Mapping and scientific assessment of soils and forest stands has long been recognized as essential to prudent management of agricultural and forest resources. Wetlands resources likewise must have a similar level of assessment and hasty legislation to lump wetlands into categories without a sound science base will put health, safety and welfare at unwarranted risk.

We regularly put wetlands and other resources in different categories for management and protection without reducing the effectiveness of management programs. EPA makes advance designation of wetlands under the 404 program, the FWS designates wetlands for the RAMSAR list of Wetlands of International Importance and has identified high priority wetlands for each region of the count. Biosphere Reserves and Natural Heritage Sites are other well recognized categories that do not reduce the value of the basic resource.

The Committee also recognizes that wetlands regulatory agencies are already engaged in wetland valuation as they decide what level of review is necessary when permits are filed. Some permits receive a desk review and others require costly field data and expert consultants. However, in many cases, the basis for this decision is not clear, interpretable or available to the permit applicant in

Some agencies make these assessments in advance of the permit process. COE and EPA make advance designations to advise the public that certain wetland complexes will require more rigorous review. New Hampshire and Connecticut have adopted manuals to guide in identifying prime wetland that will require higher levels of review.

A key element of current categorization proposals must be a means of evaluating wetlands to determine the appropriate category for each individual wetland. The Committee is familiar with widely used evaluation methods (WET, HEP, etc.) most of which are technical assessment tools, see Appendix C. We do not believe that any existing evaluation regime is adequate to measure the true value of each function performed by the myriad of types of natural wetlands in the U.S. Consequently, any attempt to evaluate and subsequently categorize natural wetlands with existing methodologies for the purposes of determining those with lesser values, would result in irretrievable harm to the Nation's wetland and wildlife resources. Unfortunately, at the present state of the art, evaluation is still largely subjective based on cursory examination or it requires detailed and costly investigations that attempt to characterize the form and function of an individual wetland system. In too many cases, cursory evaluations are highly dependent upon a few highly regarded functional values, with little avenue for encompassing the sum of the myriad functional values from even a small isolated wetland much less larger and/or multiple wetland units within hydro/bio/geographical units. Consequently, present valuation methods are likely to underestimate the value of even the highest priority wetland and could not hope to produce a realistic value for lesser wetland systems. The latter would likely include smaller systems, isolated/disjunct systems, disturbed or degraded systems, drierend wetlands or transitional zones of wetlands, and ephemeral wetlands. Many of these could have significant but unmeasured functional values.

With a few exceptions, we lack quantitative data on many functions in most important types of natural wetlands. The exceptions (mostly in fresh or salt water marshes) include components of the life support function, i.e., production of avian and mammalian fauna, finfish, shellfish, a few instances of plant products and isolated cases of water purification. For the vast majority of wetlands and even for most different types of wetland, we lack quantitative information even on the biologic productivity, much less adequate, comparable information on other important functional values.

Historically wetlands were grossly undervalued but later, a few waterfowl hunters led efforts to protect and preserve certain types of wetlands. Recently, other life support functions along with hydrologic buffering and water quality improvement, have been identified as significant values. Major segments of society now place high value on wetlands and government policy is to protect rather than destroy our remaining wetlands. A complete reversal in society's valuation of wetlands has occurred in less than 60 years. In fact, the most significant change took place within the last 20 years. Who can estimate the functional values of wetlands to society or society's attitudes, in the 21st century? If valuation schemes are employed to categorize wetlands with certain categories subsequently receiving little or no protection, evaluators must have the ability to estimate future values as well as adequately assess present values of existing wetlands. Lacking an estimate or assumption of future values, evaluators could easily under-rate a significant portion of our existing wetland resources, resulting in the loss of that segment before it has been evaluated

(valued) under the standards of a future society. It does not appear likely that a significant new category of functional value would emerge from future investigations but it would not be surprising to discover additional functions and values or a complete reordering of priorities with further understanding of "low" value wetland systems.

Furthermore evaluation of a wetland is inevitably related to time of year and age of system. Wetlands are dynamic ecosystems undergoing considerable seasonal and annual change as well as progressive change over time, as the wetland system ages. Time, techniques and location of data collection can have substantial impact on the result of a one-time evaluation.

While wetland science is limited in its ability to provide quick and inexpensive methods of quantifying all wetland functions, some means to predict wetland functions are available and being improved. The general functions of wetlands within regions of the U.S. And within local landscapes, i.e., bottomland hardwoods, estuaries, are well known. There is no longer any excuse for development, agricultural, forestry, transportation and other land use programs to fail to use current knowledge and assessment techniques to identify potential consequences of wetland loss with the intent of avoiding wetland and reducing impacts to those that, based on public values, are unavoidable. The Committee concludes that much of the past and current loss of wetlands, and the current controversy in legislative circles, is exacerbated by single-sector, land-use decisions that have not made use of available information on wetland functions and assessment techniques.

Project siting is a critical element in assessment of wetland functions. Placing monetary values on wetlands requires an economic assessment that is sensitive to the land values and economy of the locale within which the project is located. We are aware of the potential costs of assessing the functions of individual wetlands; however, it is also clear that careful and costly study of watersheds is a pre-requisite to designing flood protection programs. Farming practices are guided by professional surveys of regional and individual farm soil conditions. Forest management plans are based on detailed studies of stand composition, volume and growth. Wetlands must be included in similarly comprehensive watershed planning.

To the extent that wetlands are providing important functions in maintaining water quality, reducing flood damage and conserving biological diversity, their management requires an appropriate public investment in data collection and functional assessment. Costs for these efforts can be contained if the functions of wetlands were given due consideration and incorporated in the course of current and future publicly funded flood control, water quality, soil and forest survey and natural heritage programs. Part of the reason that the nation has experienced massive loss of wetlands is that their functions and limitations have been poorly understood by engineers and agricultural land managers.

Those who would develop or drain wetlands search for a simple value system that requires no biological expertise and limited data collection or technical review. The Committee is concerned that some categorization proposals would allow for categorization by non-wetland professionals, i.e., developers or engineers. We do not believe that other disciplines are competent to evaluate wetlands or we an national values and at this stage in the development of the science, we are opposed to those efforts.

The Committee advocates expanded use of planning level assessment by state and federal agencies for the purpose of:

- a. Improving and standardizing application of current knowledge that is applicable to wetland evaluation;
- b. Encouraging a multidisciplinary approach to wetland evaluation;
- c. Encouraging a systems approach to wetland evaluation;
- d. Improving agency consistency in the wetland permit review process, and
- e. Providing advance warning to the regulated community of wetland areas that will require more than a basic level of review.

The Committee is concerned that certain proposals for categorization for regulatory protection purposes do not distinguish among the several functions of wetlands, and lump values, such as flood control and wildlife habitat that have different biological and physical bases, into a few simple "value classes. Schemes to put wetlands into nation-wide value classes without providing for any process to distinguish between regional differences are similarly suspect. In addition, some categorization proposals appear to have a strong element of triage, i.e., if wetlands were assigned to high (Type A), medium (Type B) and low value (Type C) categories, the Committee is concerned that wetlands in the low value category would receive less protection than they currently are provided. Low value wetlands could easily fall under a nationwide permit, allowing development and subsequent loss of these so-called low value wetlands when in fact, their value is largely unknown.

Finally, the Committee recommends that high priority be given to funding research to develop improved techniques and methodologies to quantify the functional values of wetlands and effects of wetland alterations. This research should develop an objective, quantitative, sound evaluation process that can be coupled with the National Wetlands Inventory and should be accomplished by joint private, state and federal action. Similar research is urgently needed to improve inadequate methods to create compensatory wetlands that provide all of the identified wetland functions.

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APPENDIX A LEGISLATIVE HISTORY OF WETLANDS PROTECTION IN THE UNITED STATES

Legislation

The Water Pollution Control Act of 1948 (PL 80-845) was the first comprehensive statement of federal interest in clean water programs. PL 80-845 was also the first statute to provide state and local governments with some of the funds needed to solve their water pollution problems.

There were no federally required goals, objectives, limits, or even guidelines. There were no mandatory indicators of whether pollution was indeed occurring. Nevertheless, the U.S. Surgeon General was charged with developing comprehensive programs to eliminate or reduce the pollution of interstate waters.

During the latter half of the 1950's and well into the 1960's, water pollution control programs were shaped by four statutes: the Federal Water Pollution Control Act of 1956 (PL 84-60); the 1961 amendments to that Act (PL 87-88); the Water Quality Act of 1965 (PL 89-234); and the Clean Water Restoration Act of 1966 (PL 89-753). All of these statutes dealt largely with federal assistance to municipal discharges and with federal enforcement programs for all discharges.

Water quality standards become a prominent feature of the law with the passage of PL 89-234, the Water Quality Act of 1965. That law created the Federal Water Pollution Control Administration (FWPCA) and required the development of state water quality standards for interstate waters.

In 1963, Massachusetts enacted a permit-based wetland regulation program, followed by Rhode Island, Connecticut and several other northeastern states.

The Federal Water Pollution Control Act Amendments of 1972—as the Clean Water Act is officially titled—was enacted October 18, 1972. It was the 500th public law passed by the 92nd Congress, hence its short title, PL 92-500. Local, state, and national water quality programs since 1972 have been more firmly shaped by the assumptions in PL 92-500 than by any other law. In more ways than most people realize, Congress changed “business as usual” when it passed PL 92-500. The statute has been amended 12 times since 1972.

The 1972 Federal Water Pollution Control Act Amendments added the section 402 National Pollution Discharge Elimination System (NPDES) permit program, 33 U.S.C. 1344 (1988), to eliminate water quality problems by regulating the discharge of pollutants to the nation’s waters.

The Coastal Zone Management Act of 1972, 16 U.S.C. 1451, (1972), requires applicants to obtain certification from the relevant state coastal resources agency that a permitted activity complies with the state’s coastal zone management program. The state’s program must be approved by the Commerce Department.

The Water Quality Act of 1987, emphasized technology-based standards for industrial dischargers; enhanced enforcement authority with increased civil, criminal, and administrative penalties; and recognized the critical pollution problems of non-point sources.

The federal government has adopted a number of policies aimed at reducing the direct effects of its activities on wetlands. Relevant authorities include the National Environmental Policy Act (NEPA), the Fish and Wildlife Coordination Act, Executive Order 11990 on the Protection of Wetlands, and the Water Resources Development Act of 1986, which includes requirements for mitigation of adverse effects on wetlands. In some coastal areas, the Coastal Barriers Resources Act (CBR), which makes new development projects in designated areas ineligible for most federally financed assistance programs, is also important.

The Tax Reform Act of 1986 eliminated most of the special tax advantages that accrued to farmers and developers for new investments, particularly in wetland areas. The Food Security Act of 1985 included a “swampbuster” provision that makes farmers ineligible for agricultural income-support programs if they convert wetlands and plant commodity crops on them. The Coastal Barriers Resources Act of 1982 withdrew all federal subsidies for development on designated coastal barrier islands and beaches, where wetlands are a critical feature of the environment.

In 1986, the Congress enacted the Emergency Wetlands Resources Act to promote the conservation of our nation’s wetland in order to maintain the public benefits they provide, as well as help fulfill international obligations contained in various migratory bird treaties and conventions. The intent was to protect, manage, and conserve wetlands by intensifying cooperative and acquisition efforts among private interests and local, state, and federal governments.

Regulation

The Clean Water Act (CWA) section 404 permit program regulates the discharge of dredged or fill material into “navigable waters of the United States, which includes adjacent wetlands. 33 U.S.C. 1344 (1972). The program is jointly administered and enforced by the U.S. Army Corps of Engineers (Corps) and the United States Environmental Protection Agency (EPA). The Corps has the primary permit issuance authority. The CWA authorizes the Corps to issue individual and general permits.

The individual permit process under section 404(a) requires the Corps to apply a broad-based “public interest” review test. This test balances a variety of factors ranging from economic to energy considerations. The Corps must also ensure that the permit complies with EPA’s detailed environmental criteria—the section 404(b)(1) guidelines. 40 C.F.R. 230 (1991).

Section 404(b)(1) of the CWA requires the EPA to establish guidelines that specify where and under what conditions dredged or fill material can be discharge lawful. 33 U.S.C. 1344(b)(1). The practical alternatives test is one component of the section 404(b)(1) guidelines.

The practical alternatives test prohibits the discharge of dredged or fill materials to waters of the United States, including wetlands, if there is a “practicable alternative to the proposed discharge that would have less adverse impact on the aquatic

ecosystem, provided that the alternative does not have other, more adverse environmental impacts." 40 C.F.R. 230.10(a) (1991).

Under section 404(c), Congress granted EPA the right to veto Corps permit actions if the discharge would result in "unacceptable" adverse effects on municipal water supplies, shellfish, fishing areas, wildlife or recreation areas.

The second avenue for approval of discharges is authorized by section 404(e). 33 U.S.C. 1344(e) (1972). Here, a proposed discharge may fall under one of thirty-six general permits.

The federal wetland delineation manual is the Corps' primary resource in making wetland determinations. In the 1992 Energy and Water Development Appropriations Act, congress mandated that the Corps use the 1987 manual pending resolution of the proposed changes to the 1989 manual. Pub. L. No. 102-104, 105 Stat. 511 (1991).

MOAs/Executives Orders

Memorandum of Agreement (MOA) Between the Department of Army and the Environmental Protection Agency Concerning Federal Enforcement for the section 404 program of the Clean Water Act (Jan. 19, 1989) (1989). Under this accord, the Corps retains primary responsibility for matters of jurisdiction, that is, determining whether wetland regulations apply.

The 1990 Memorandum of Agreement (MOA) on mitigation between the Army Corps of Engineers (Corps) and the Environmental Protection Agency (EPA) provided new guidance for wetland mitigation 55 Fed. Reg. 9210 (1990).

The MOA is the first joint guidance issued. It is used by the Corps and EPA to determine the type and level of mitigation necessary for compliance with the guidelines.

The MOA gives wetland a higher priority than other aquatic areas. The Corps agreed that, as to wetland, it will seek to achieve a goal of no overall net loss of values and functions.

In one of the most significant sections of the MOA, it adopted the Council on Environmental Quality's (CEQ) definition of mitigation, 40 C.F.R. 1508.20 (1991), which is avoiding, minimizing, and rectifying impacts; reducing impacts over time, and compensating for impacts, summarized in the MOA as avoidance, minimization, and compensatory mitigation. The MOA then went further than CEQ by requiring that mitigation measures be applied in the sequence set forth in the CEQ regulation.

Executive Order No. 11990, titled, "Protection of Wetlands," although not applying to private work done under federal permit with no federal funding or assistance, does direct that each agency shall take action "to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands." It further directs that work conducted or funded by a federal agency shall "to the extent permitted by law avoid undertaking or providing assistance for new construction located in wetlands unless "there is no practicable alternative to such construction" and "the proposed action includes all practicable measures to minimize harm to wetlands.

Executive Order No. 11988, dealing with protection of floodplains, similarly requires written agency justification for a project proposed to be located in a floodplain; a statement indicating whether the action conforms to applicable state or local floodplain protection standards; and a list of alternatives considered. Unlike Executive Order No. 11990, this one reaches federal permit issuance as well as other federal activities.

Agency Policies

EPA

Section 404 authorizes a special permit program to control dredge and fill operations. It makes the Secretary of the Army responsible for issuing such permits. But the Secretary and the EPA Administrator are jointly responsible for setting the guidelines by which permits are to be judged.

EPA's guidelines are often considered the driving force in the Corps permit process. These guidelines, which were issued in 1980, state that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem" 40 C.F.R. 230.10(a) (1980). EPA is involved in the 404 permit program in other important ways, too. For example, EPA controls what areas can be listed as suitable disposal sites and can prohibit certain materials from being discharged at an approved site on certain grounds. Permits issued under section 404 expire at the end of five years.

The land use control trend becomes apparent particularly when reviewing EPA decisions made pursuant to its section 404(c) authority. To substantiate a veto under section 404(c), 33 U.S.C. 1344(c) (1988), EPA must find unacceptable adverse effects on municipal water supplies, shellfish beds and fishery areas, wildlife, or recreational areas.

EPA first published rules implementing section 404(c) on October 9, 1979—some seven years after passage of the Act. These rules included reference to a prior set of section 404(b)(1) guidelines, which EPA said set forth not only the criteria for permit issuance by the Corps, but also “the substantive criteria by which the acceptability of a proposed discharge is to be judged for purposes of section 404(c). 44 Fed. Reg. 58,076 (1979). Late the following year, EPA published new section 404(b)(1) guidelines without amending its section 404(c) regulations. 45 Fed. Reg. 85,336 (Dec. 24, 1980).

EPA has since interpreted section 404(c) and these guidelines to provide a single environmental imperative which is applied only after the Corps’ “public interest” review has determined that the project is on balance, socially beneficial.

Under section 309 a of the CWA, the EPA is empowered to issue administrative orders in response to wetland violations. 33 U.S.C. 1319(a) (1986).

Department of Interior

FWS

The Fish & Wildlife Service recognizes the definition of mitigation provided by the Council of Environmental Quality that includes a logical sequence of steps: (1) avoiding the impact, (2) minimizing the impact, (3) rectifying the impact, (4) reducing or eliminating the impact over time, and (5) compensating for the impact as a last resort action. Further, the Service’s mitigation policy established a concept of Resource Categories with designation criteria for each category, and mitigation goals for each category.

COE

The Act gives the Corps permitting authority under section 404(a), 33 U.S.C. 1344(a) (1988); with the obligation to consider the criteria promulgated by EPA pursuant to section 404(b), 33 U.S.C. 1344(b) (1988).

To comply with the court ruling in *NRDS v. Callaway*, the Corps expanded the jurisdictional reach of the section 404 program from the traditional concept of navigable waters to one consistent with other CWA programs.

Department of Agriculture

SCS

The Soil Conservation Service is charged with delineating wetland under the swampbuster provision of the Farm Act. They use the 1987 Wetlands Delineation Manual during this process.

Department of Transportation

The Federal Highway Administration funded the development of the Wetland Evaluation Technique (WET) in 1982-83. This technique has since been refined and reissued by the U.S. Army Corps of Engineers (WET II).

State Protection

As detailed above, state wetland relations date from the Massachusetts legislation of 1963. Today, all coastal states have some form of regulation over alteration of marine wetlands, and 14 states have a freshwater wetland regulatory program.

Congressional response to the lack of success under section 208 resulted in the addition of section 319, the Nonpoint Source Management Program, in 1987.

Under section 319, EPA funding grants encourage the states to voluntarily opt into the federal program. The states may identify and inventory nonpoint source problems affecting their waters, prioritize and develop strategies for addressing them, but no federal permit program is created under section 319.

CWA section 401(a) certification requirement is a power tool for state participation in CWA section 404 federal permitting of dredge and fill activities in wetland. The section 401(a) certification requirement is designed to insure that projects requiring a federal permit comply with certain CWA requirements including state water quality standards.

Few states have promulgated water quality criteria for wetlands. EPA as recommended that states develop water quality criteria for wetlands by using a two-phase approach. Phase I involves development of water quality standards for wetlands

based upon existing information. EPA expects the states to accomplish phase I by the end of fiscal year 1993. Phase II involves further refinement of the water quality standards using new science and program developments.

Currently, about 10 states utilize some form of classification system in their regulation of activities affecting wetland.

Under section 401 of the CWA, 33 U.S.C. 1341 (1988), and section 307(c)(3) of the Coastal Zone Management Act (CZMA), 16 U.S.C. 1456(c)(3) (1988), Congress has provided every state ample authority to "veto," or to impose virtually any condition it wants, in every federal section 404 permit and almost every federal permit under section 10 of the Rivers and Harbors Act (RHA).

Proposed Legislation

In October 1990, the Comprehensive Wetlands Conservation and Management Act of 1990 (H.R. 5968) was introduced. The bill, reintroduced as H.R. 1330 on March 7, 1991, would substantially modify the section 404 wetland permit process by establishing a federal wetland classification program.

Other bills regarding wetland classification and/or protection have been introduced into the House to moderate or offset the thrust of H.R. 1330, for example the Wetlands No Net Loss Act of 1991, H.R. 251, and the Wetlands Protection and Regulation Reform Act of 1991, H.R. 404.

Two bills have been introduced into the House of Representatives this year, H.R. 350 and H.R. 1330. Both bills address amendments to section 404 of the CWA.

APPENDIX B NORTH DAKOTA'S NO NET LOSS OF WETLANDS LAW

North Dakota is located in the 300,000 sq. mi. Area known as the Prairie Pothole Region, and it produces one-half of the ducks produced in the lower 48 states in an average water year. Prairie wetlands exist in complexes of various types that are most easily defined by the degree of permanency of water. Of the estimated original 3 million acres of prairie wetland in the state, about 2 million acres remain.

In 1987, the North Dakota Legislature passed a law commonly referred to as the No-Net-Loss of Wetlands (NNLW) law. The final bill that was passed by the legislature was the result of intense negotiations between water development and wildlife interests in the State, where tradeoffs were made on both sides. Historically, wetland laws in North Dakota were permissive to the point of encouraging wetland drainage for agricultural purposes. Thus, the NNLW law was designed as a means of restricting wetland drainage to reduce the average annual loss of 20,000 acres per year. This law is by far the most significant piece of legislation affecting North Dakota's wetland ever passed by the State Legislature, and includes a policy which states, in part, "the legislative assembly therefore concludes that wetlands should be protected and preserved".

More recently, the law has been closely scrutinized and criticized for being a "wetland mitigation bank" with serious flaws by some conservation interests, yet attempts have been repeatedly made to repeal the law by pro-drainage interests saying the law is too restrictive. The origin intent of the North Dakota law was to restrict and restrain wetland destruction. The law, as most true compromises, has areas which can be improved.

To accomplish NNLW, North Dakota law requires acre-for-acre replacement of all wetlands drained under permits authorized by the state. A state permit is required for all wetlands with a drainage area of 80 acres or more (note that is drainage area, not wetland acres). A statewide wetland banking system is used to track wetland losses and replacements within four biogeographical units (biotic areas) and individual counties. Only the acreage of restored and created wetland with "material wildlife values" as determined by the North Dakota Game and Fish Department are credited to the bank as replacement wetland. This system is used to target replacements so that at least 50 percent of the lost acreage is replaced in the same biotic area. The law ensures that statewide wetland losses do not exceed replacements by more than 2500 acres at any one time, and the banking system is divided into temporary and permanent replacements. Only permanent replacements are allowed to be credited against drainage acres in the bank.

A party draining a wetland under a state drainage permit may replace an equal wetland acreage at entirely their own expense or by using replacement credits in the wetland bank with payment of 10 percent of the replacement cost. Replacement costs are calculated by adding the average land value in the biotic area and the estimated construction costs to replace that acreage. The wetland bank cannot be used if replacements are not available. There is no direct requirement to replace wetlands which do not require a state drainage permit (less than 80 acre watershed),

but those acres are registered as losses (debits) in the bank and reduce the available replacement acres (credits) in the area of drainage.

North Dakota enacted the nation's first no net loss of wetlands legislation in 1987. The concept embodied in this legislation, and the actual nuts and bolts of the system, may do more to protect wetlands, and guarantee the existence of a non-decreasing wetland base, than any other regulatory approach could possibly hope to achieve. In fact, the widely accepted Fish and Wildlife estimate of 20,000 acres of wetland lost per year has been eliminated, and the wetland bank currently shows a net increase of approximately 500 acres. Swampbuster is probably the main reason for halting the wetland drainage, but over the long-term, it is the no net loss program which will maintain the existing wetland base.

Unlike other regulatory programs, North Dakota's no net loss incorporates flexibility, management and balance. The key points of the program include:

1. *Wetland Policy.* This is essential, as it is opinions and attitudes which determine the support and actions of landowners.
 2. *Drain Permit.* Only those wetlands with a watershed area of 80 acres or more require a state permit.
 3. *Wetlands Bank.* All wetlands, regardless of size, are counted as debits in the bank if drained, and credits in the bank if restored or created (created wetland must have material wildlife values).
 4. *Replacement Requirements.* All wetlands drained must be replaced with an equal acreage of replacement wetland. If a wetland has a watershed area of more than 80 acres, it must be replaced by the sponsor or landowner, using one of three options:
 - a. Replacement on-farm
 - b. Replacement off-farm arranged by the project sponsor
 - c. Replacement off-farm through application to the wetland bank.
 5. *Replacement Costs.* The project sponsor, whether individual landowners or other wise, is required to pay only 10% of the replacement costs if replacement is satisfied through wetland bank.
 6. *Debit Limits.* The wetland bank cannot carry any more than 2500 acres as debit.
 7. *Wetland Replacement Acquisition.* This must come from willing sellers, and cannot interfere with natural waterways or artificial channels.
 8. *Replacement Tax Payments.* This law requires that land placed into federal ownership to meet replacement requirements must not diminish tax payments to local governments. Full replacement tax payments must be made.
 9. *Wetlands Bank.* The wetland bank, for record purposes, is divided into four accounts:
 - a. Government agency account
 - b. Surface coal mining account
 - c. Temporary account
 - d. Permanent account. This account is for permanent credits and debits which comprise the true, usable bank balance.
 10. *Location of Replacement Wetlands.* The replacement of wetland must come from the following areas:
 - a. Same or surrounding counties—50%
 - b. Statewide—50%
 - c. If not available from same county or surrounding counties, replacement wetland can come from same biotic area
 11. *Administration.* The no net loss program is jointly administered by the State Engineer and the Game and Fish Director, to guarantee an equal balance of management and decisionmaking. All permits must have joint approval.
 12. *Flexibility and Management.* The no net loss program requires that the existing wetland base be maintained, but allows flexibility and management.
- The North Dakota no net loss of wetlands law, being the first ever developed, is certainly subject to improvement and refinement. The results achieved to date are remarkable. The support and approval of the state (Governor and State agencies) and local governments cannot be under-estimated for those who are seriously interested in protecting wetlands.
- When these laws were developed, it was recognized that acre-for-acre replacement is a less than perfect method for conserving wetlands because it risks the loss of wetland values. An ecological equivalency method of replacement is obviously an ideal, though may be impossible due to lack of knowledge in some areas of wetland functions. It was also recognized, however, that a value based system such as in-

kind replacement on a project-by-project basis would place unworkable demands on state agencies and individuals, and inherently lacks the flexibility to be acceptable and workable to North Dakota. There may also be an under-reporting occurring of wetlands that have a watershed less than 80 acres that don't require a permit, but may be placed as a debit in the bank. Also, a recent review by the Corps of Engineers of the North Dakota wetland bank found that replacement credits weren't occurring in the biotic area of loss as desired.

Another topic of concern is that state and federal agency wetland restorations, as required by state law, are recorded as credits in the wetland bank. Some people conclude that state and federal agencies are restoring wetland in order to facilitate wetland drainage in other areas. A true mitigation bank would require those needing the mitigation credits to pay for them in entirety.

In summary, the no-net-loss of wetlands law for North Dakota was heralded by many conservation interests as a landmark in wetland protection for the state. Proponents of this legislation point out that the law needs refinement and improvement over time, but believe that this type of system can lead to balanced water management in prairie states.

OPERATION OF THE NORTH DAKOTA WETLANDS BANK

The Wetlands Bank in its most limited definition is simply the accounting system that records acreages of wetlands drained and wetlands created in North Dakota, pursuant to Chapter 61, NDCC. The accounting system maintains a net balance of wetland acres for each county, within contiguous counties, within each of the four biotic areas of the state, and statewide.

Operation of the Wetlands Bank is governed by a number of definitions and rules relative to how wetland acreages are determined, what is credited and what is debited, how the cost of replacement acreages are determined, and other functions necessary to maintain these wetland acreage accounts.

In operation, the Wetlands Bank is actually the system which performs the many functions necessary to monitor wetland drainage and replacements and ensures that there is essentially no net loss of wetland acres within North Dakota by maintaining a net balance above the established 2,500 acre deficit limit. By monitoring wetland acreage changes within individual counties, contiguous counties, and biotic areas, the Wetlands Bank also serves to target replacement efforts and ensure that 50 percent of the replacement acreage is located in the area of drainage.

Because of the nearly infinite variety of wetland drainage and replacement projects which the Bank must handle, the operational rules must be flexibly interpreted and applied. Judgments and determinations necessary to implement these rules and operate the Bank are jointly made by the state engineer and the Game and Fish Director. An interagency evaluation team comprised of one person from the state engineer's office and one from the North Dakota Game and Fish Department handle day-to-day debiting and crediting operations. If the team cannot reach agreement, then the state engineer and Director directly resolve the matter.

Credits to the Bank are made for all acreages of restored wetland and for acreages of manmade wetland that are determined by the commissioner and state engineer to have "material wildlife values". Guidelines for determining whether a man-made wetland has (or will have) material wildlife value requires the evaluation team to consider soil types, water depth and permanence, adjacent land use, the likelihood that desirable wetland vegetation will become established, the potential for wildlife use, and other factors pertinent to the wetland under consideration. In essence, the determination is the evaluation team's judgment that the man-made wetland will provide habitat comparable to a natural wetland in good condition. The evaluation team may determine that only a portion of a man-made wetland has material wildlife value and limit credits to that acreage.

Debits are made for all wetland acres drained. Although only drainage of wetlands with 80 acres or greater watersheds requires a state permit and is, therefore, easily tracked and accounted in the Bank, drainage of smaller wetlands is also subject to debiting.

Exceptions to the above credit and debit rules are made for wetlands replaced as required mitigation for federal projects, wetlands involved in active mining operations, and wetlands that are or may be only temporarily restored such as those under the Conservation Reserve Program. Separate accounts are kept for wetlands involved in mining operations and temporary restoration programs. These accounts will be reconciled and incorporated into the permanent banking system upon completion of the mining operation or a finalization of temporary wetland restoration programs.

The acreage of any wetlands which are drained or created is determined by the spring water level in years with typical amounts and rates of runoff during periods judged to be of normal precipitation. Aerial photographs, meteorological data, soil surveys National Wetland Inventory maps, and watershed size, wetland basin size and watershed yield calculations, plus any other enlightening information may be used to arrive at the most accurate acreage determination possible.

Under North Dakota wetlands law, only projects that either store more than 12½ acre feet of water or drain wetland with greater than 80 acre watersheds require permits from the state engineer. All wetland drainage and wetland creations are, however, eligible for debiting and crediting to the Wetlands Bank. An additional function of the wetlands banking system is, therefore, to coordinate directly with the many public and private entities involved in small wetland projects to create a timely and efficient reporting network that allows debiting and crediting of unpermitted wetland drainage and development.

In both debiting and crediting operations, the state engineer's office assumes primary responsibility for developing technical information on water volumes, acreages, and depths. The Game and Fish Department is principally responsible for identifying the ecological limits of wetland and determining acreages with material wildlife values. With experience, members of the interagency evaluation team become well acquainted with technical aspects of determinations made by both agencies and the basis for judgments made by each. This results in some ability for critical review, productive discussion, and problem resolution by the team beyond what may be initially apparent.

Day to day operation of the Wetland Bank can perhaps be better understood by considering typical credit and debit situations and the major complexities associated with each.

Wetland Credits:

In credit determinations, the major challenge for the evaluation team is to agree on the size of the wetland that will be created and the acreage of the created wetland that will have material wildlife value. In other words, to determine the size of the credit that should be made to the Bank.

For projects requiring permits, the application received by the state engineer generally contains sufficient information relative to watershed and basic characteristics, the proposed water retention structure, and any proposed operational features or water management purposes so that the size and general characteristics of the wetland to be created can be reasonably determined. If all regulatory requirements external to the Wetlands Bank are met, a permit to construct is issued and all available project information is submitted to the interagency evaluation team's representative at the state engineer's office. Information relative to credit projects that do not require permits is submitted directly to the evaluation team at the state engineer's office.

A preliminary determination as to the amount of credit is made by the state engineer's office, a standardized wetland evaluation form is completed and this form along with other relevant project and watershed information is forwarded to the North Dakota Game and Fish Department of review and concurrence. If there is disagreement, the evaluation team representatives meet and attempt to resolve differences.

Upon agreement of both agencies, the Wetlands Bank evaluation form is signed, the credit acreage is entered into the proper account, and copies of the evaluation form are permanently filed at the state engineer's office.

Projects that attempt to restore natural wetland at or near their original water level through a simple ditch block are the most common credit project and are generally quite easy to agree on. Projects that involve increasing the size of an existing natural wetland and those which utilize mechanical structures to partially restore a basin or manipulate water levels for wetland enhancement or other water management purposes are more problematic. Determining a proper credit acreage for such projects is done case-by-case and often involves professional judgment to reach "best guess as to the acreage that has material wildlife value and will be credited to the Bank.

Cases involving credits for man-made wetland are so variable that it is difficult to discuss a typical situation. Varying from easily evaluated small, shallow dams and stock ponds to very complex, large multipurpose reservoirs, each project must be considered separately, if not uniquely, by the evaluation team. Thus far few rules for crediting man-made projects have been developed. In general, full acreage credit is given for most small (less than 5 acres), shallow (less than 6' maximum water depth) man-made wetland that meet other regulatory guidelines for determining

material wildlife value. For larger impoundments, only acreages covered by water less than 3 feet deep are considered for credit; again, pending application of other regulatory guidelines for determining material wildlife value.

Undoubtedly, with more experience, additional methods, and guidelines for crediting manmade wetland will be established. For the present, the evaluation team is very conservatively crediting man-made wetland to attempt to give credit for only those acreages which clearly provide material wildlife values.

Wetland Debits:

Debits to the Bank are similarly processed, but generally less problematic. In the case of debits, the team must first reach agreement on the acreage to be drained and then check the statewide account to determine whether or not the 2,500 acre debit limit will be exceeded. If the debit limit would be exceeded, a drainage permit cannot be issued and no debit is made. Projects not requiring permits are not subject to the 2,500 acre limit, but are debited to appropriate accounts.

In order to debit the Bank, the party proposing the drainage must agree to pay 10 percent of the cost of replacement. A final function of the debiting operations of the Wetlands Bank is, therefore, to determine wetland replacement costs.

Wetland replacement costs are annually determined for each of the four biotic areas. These costs are a composite of the average land value in each biotic area plus a statewide average construction cost for wetland restoration projects. These per acre costs are jointly determined by the commissioner and state engineer based on land values annually published by North Dakota State University and actual construction costs obtained from the U.S. Fish and Wildlife Service, Ducks Unlimited, and others involved in wetland restorations and developments.

Although debits are generally less problematic to process, determination of the acreage of a wetland to be drained is not always as simple as it may sound and certainly not immune from debate or external criticism. The potential for disagreement over debit wetland acreage determinations arises largely because of the 10 percent replacement cost-share that is required of the party desiring to drain. This cost is a per acre figure within each biotic area of the state and so obviously the larger the debit determination (wetland size), the greater the amount payable. The highly variable and often difficult to determine boundaries of many wetlands offers considerable room for debate and criticism. As outlined in Section 81-02-03-11 of the drainage rules, the evaluation team is required to consider virtually all available information in determining wetland acreages. The final determination may be arrived at as a compromise or "best guess" of the team.

APPENDIX C HABITAT EVALUATION TECHNIQUES

Several approaches to wetland evaluation for various community functions are in use, the Habitat Evaluation Procedure (HEP) of the Fish & Wildlife Service, the Corps of Engineer's Wetland Evaluation Technique (WET), and a less widely known, community-oriented, Guild Matrix Analysis (GMA). The three differ markedly in approach and merits. Although all include habitat assessment, they do so in quite different levels and for different reasons. Accuracy of all systems is reduced by minimal data bases, but different goals may be more important than precision.

The Habitat Evaluation Procedure (HEP) is wildlife species-oriented (Flood et al. 1977), although several species have been pooled in some studies to provide an assemblage or community-level treatment. The key feature of this analysis is the Habitat Suitability Index (HSI with a maximum value of 1.0) based on the best-available-data on habitat use by a particular species. This index is calculated for a specific area and is multiplied by acreage to produce Habitat Units (HU). The logic of the calculation is that habitat lost or replaced should be estimated on the basis of quality rather than acreage. Thus, the technique can be applied to two areas for current comparison or to a before-and-after setting to measure loss (as in habitat damage) or improvement (as in restoration projects). It is limited by the fact that HSI models are not available for all species or areas, and often are based on few variables and minimal data.

WET is a broader system used to estimate all wetland functions, using a rating of high, moderate or low, and including functions such as hydrology, water purification, food production and export, fish and wildlife habitat, and values such as esthetic, historic and passive recreation (Adamus, et al. 1987). A major advantage is that of a landscape approach which considers topography, wetland connectivity, and other geomorphic parameters. Although WET uses waterfowl and waders as biological indicators, groups rather than species are assessed, and habitat associations are

not very specific. Moreover, rare species are immediate "red flags" that outweigh other considerations.

Partly a an outgrowth of attempting to broaden HEP to assemblages or communities rather than species, Short & Burnham (1982) devised a guild analysis using a resource matrix for bird species. As a community or habitat-oriented approach, GMA allows assessment at various scales, and attempts to assess habitat resource availability in relation to behavioral characteristics of the guilds that limit them to certain habitats. The overall advantage is that it deals with large- and mid-scale issues using simple measures like presence and absence, meaning that general information can be used when detailed data are not available. Additionally, the scale can be modified to more detailed habitat units or by species selection, but the focus remains on availability of habitat resources such as food, nest-sites, rest areas, etc. for a guild of species rather than on detailed knowledge of a single species or taxonomic group banking), or to assess quality of a replacement wetland. Greater precision is required to measure enhancements than to measure restoration success (because they tend to improve habitat less dramatically than those actions that start from near-zero), which itself is more demanding than measuring the success of wetland creation. Hence, different goals demand different levels of precision.

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103D CONGRESS
1ST SESSION

S. 1304

To amend the Federal Water Pollution Control Act to improve the conservation of wetlands and thereby restore and maintain the physical, chemical, and biological integrity of the Nation's waters, and for other purposes.

IN THE SENATE OF THE UNITED STATES

JULY 28 (legislative day, JUNE 30), 1993

Mr. BAUCUS (for himself and Mr. CHAFEE) introduced the following bill; which was read twice and referred to the Committee on Environment and Public Works

A BILL

To amend the Federal Water Pollution Control Act to improve the conservation of wetlands and thereby restore and maintain the physical, chemical, and biological integrity of the Nation's waters, and for other purposes.

1 *Be it enacted by the Senate and House of Representa-*
2 *tives of the United States of America in Congress assembled,*

3 **SECTION 1. SHORT TITLE.**

4 This Act may be cited as the "Wetlands Conservation
5 and Regulatory Improvements Act".

1 **SEC. 2. AMENDMENT OF FEDERAL WATER POLLUTION CON-**
2 **TROL ACT.**

3 Except as otherwise expressly provided, whenever in
4 this Act an amendment or repeal is expressed in terms
5 of an amendment to, or repeal of, a section or other provi-
6 sion, the reference shall be considered to be made to a
7 section or other provision of the Federal Water Pollution
8 Control Act (33 U.S.C. 1251 et seq.).

9 **SEC. 3. DECLARATION OF POLICIES AND GOALS.**

10 Section 101(a) (33 U.S.C. 1251(a)) is amended—

11 (1) by striking “and” at the end of paragraph
12 (6);

13 (2) by striking the period at the end of para-
14 graph (7) and inserting “and”; and

15 (3) by adding at the end the following:

16 “(8) it is the national policy to achieve, through
17 regulatory and nonregulatory strategies involving all
18 levels of government—

19 “(A) the restoration of wetlands to in-
20 crease the quality and quantity of the wetlands
21 resource base of the United States; and

22 “(B) no overall net loss of the remaining
23 wetlands resource base of the United States.”.

24 **SEC. 4. DEFINITION AND DELINEATION OF WETLANDS.**

25 (a) **DEFINITIONS.**—Section 502 (33 U.S.C. 1362) is
26 amended—

1 (1) in paragraph (7) by inserting “, including
2 wetlands” immediately before the period; and

3 (2) by adding at the end the following new
4 paragraph:

5 “(21) The term ‘wetlands’ means those areas that
6 are inundated or saturated by surface water or
7 ground water at a frequency and duration sufficient
8 to support, and that under normal circumstances do
9 support, a prevalence of vegetation typically adapted
10 to life in saturated soil conditions. Wetlands gen-
11 erally include swamps, marshes, bogs, fens, potholes,
12 playa lakes, vernal pools, and similar areas.”.

13 (b) DELINEATION OF WETLANDS.—

14 (1) REVISIONS TO DELINEATION PROCE-
15 DURES.—After the date of enactment of this Act, no
16 revisions to or clarifications of the guidelines for
17 identifying and delineating wetlands areas under sec-
18 tion 404(a) of the Federal Water Pollution Control
19 Act (33 U.S.C. 1344(a)), as amended by this Act,
20 shall be issued until the National Academy of
21 Sciences has completed the study of wetlands au-
22 thorized by Public Law 102-389.

23 (2) CONTINUED USE OF 1987 MANUAL.—Until
24 the guidelines for identifying and delineating wet-
25 lands areas are issued pursuant to section 404(a) of

1 the Federal Water Pollution Control Act (33 U.S.C.
2 1344(a)), as amended by this Act, the Secretary of
3 the Army, acting through the Chief of Engineers,
4 and the Administrator of the Environmental Protec-
5 tion Agency shall use the January 1987, "Corps of
6 Engineers wetlands delineation manual" and imple-
7 menting guidelines to identify and delineate such
8 wetlands areas.

9 (3) DELINEATION GUIDELINES.—Section
10 404(a) (33 U.S.C. 1344(a)) is amended by inserting
11 "(1)" after "(a)" and by adding the following new
12 paragraph:

13 "(2) The Administrator in conjunction with the
14 Secretary, the Secretary of Agriculture and the Sec-
15 retary of the Interior shall, after field testing and
16 notice and opportunity for public review and com-
17 ment, issue guidelines to identify and delineate wet-
18 lands areas. The guidelines shall—

19 "(A) be developed in consultation with the
20 States;

21 "(B) be based on the best available sci-
22 entific information; and

23 "(C) take into account regional variations
24 in hydrology, soils, and vegetation."

1 (4) DELINEATION TRAINING, CERTIFICATION
2 AND OUTREACH.—

3 (A) TRAINING OF WETLANDS DELINEA-
4 TORS.—The Secretary of the Army, acting
5 through the Chief of Engineers, and the Admin-
6 istrator of the Environmental Protection Agen-
7 cy shall, in consultation with the Coordinating
8 Committee establish under section 323 of the
9 Federal Water Pollution Control Act, as amend-
10 ed by this Act, develop materials and conduct
11 training courses for consultants and State and
12 local governments to explain the guidelines for
13 identifying and delineating wetlands areas pur-
14 suant to section 404(a) of the Federal Water
15 Pollution Control Act (33 U.S.C. 1344(a)), as
16 amended by this Act.

17 (B) FUNDING FOR TRAINING AND CERTIFI-
18 CATION PROGRAM.—Of amounts appropriated
19 for each fiscal year beginning after the date of
20 the enactment of this Act for administration of
21 section 404 of the Federal Water Pollution
22 Control Act (33 U.S.C. 1344) by the Corps of
23 Engineers, the Secretary of the Army, with the
24 Administrator, shall use such amounts as are
25 practicable to carry out the Corps of Engineers

1 Program for interagency wetlands delineation
2 training and the program for training and cer-
3 tification of Federal employees and other indi-
4 viduals as wetlands delineators authorized by
5 section 307(e) of the Water Resources Develop-
6 ment Act of 1990 (Public Law 101-640).

7 (5) ASSISTING SMALL LANDOWNERS WITH WET-
8 LANDS DELINEATION.—

9 (A) IN GENERAL.—Of amounts appro-
10 priated for each fiscal year beginning after the
11 date of enactment of this Act for administration
12 of section 404 of the Federal Water Pollution
13 Control Act (33 U.S.C. 1344), the Secretary of
14 the Army, acting through the Chief of Engi-
15 neers, and the Administrator of the Environ-
16 mental Protection Agency shall use such
17 amounts as are necessary, but not to exceed a
18 combined total of \$5,000,000, to assist private
19 landowners who lack the financial capacity to
20 identify or delineate wetlands in order to apply
21 for permits under that section or to avoid im-
22 pacts to wetlands.

23 (B) FORM OF ASSISTANCE.—The assist-
24 ance under subparagraph (A) shall be provided
25 in cooperation with the Director of the United

1 States Fish and Wildlife Service and the Chief
2 of the Soil Conservation Service and shall
3 include—

4 (i) the delineation of wetlands bound-
5 aries within ninety days of a request for
6 such delineation to the maximum extent
7 practicable; and

8 (ii) technical assistance to owners of
9 wetlands in the preparation of wetlands
10 management plans for their lands to pro-
11 tect and restore wetlands and meet other
12 goals of the Federal Water Pollution Con-
13 trol Act, including protection and propaga-
14 tion of fish, shellfish, and wildlife, control
15 of nonpoint and point sources of pollution,
16 prevention and reduction of erosion, and
17 protection of estuaries and lakes.

18 (C) REGULATIONS.—Within one hundred
19 and eighty days after the date of enactment of
20 this Act, the Secretary and the Administrator
21 shall issue regulations defining the scope of
22 technical assistance and which landowners are
23 eligible for assistance under this paragraph.

24 (6) EDUCATION AND INFORMATION.—The Sec-
25 retary of the Army, acting through the Chief of En-

1 gineers, and the Administrator of the Environmental
2 Protection Agency shall, in cooperation with the Co-
3 ordinating Committee established under section 323
4 of the Federal Water Pollution Control Act (as
5 amended by this Act), prepare, update on a biannual
6 basis, and make available to the public for purchase
7 at cost—

8 (A) an indexed publication containing all
9 Federal regulations, general permits, and regu-
10 latory guidance letters relevant to the permit-
11 ting of activities pursuant to section 404 of the
12 Federal Water Pollution Control Act (33 U.S.C.
13 1344); and

14 (B) information to enable the general pub-
15 lic to understand the delineation of wetlands,
16 section 404 permitting requirements, wetlands
17 restoration, and other matters considered rel-
18 evant.

19 **SEC. 5. REGULATION OF ACTIVITIES.**

20 (a) **DEFINITION OF FILL MATERIAL.—**

21 (1) Section 404(d) (33 U.S.C. 1344(d)) is
22 amended—

23 (A) by inserting “(1)” after “(d)”; and

24 (B) by adding at the end the following:

1 “(2) The term ‘fill material’ as used in this
2 section means any material that has the effect
3 of replacing portions of navigable waters or
4 changing the bottom elevation or configuration
5 of a water body.”.

6 (2) Section 502(6) (33 U.S.C. 1362(6)) is
7 amended by inserting “fill material, dirt,” after
8 “dredged spoil,”.

9 (b) DEFINITION OF DISCHARGE OF DREDGED OR
10 FILL MATERIAL.—Section 404(d) (33 U.S.C. 1344(d)),
11 as amended by this Act, is amended by adding at the end
12 the following:

13 “(3) The term ‘discharge of dredged or fill ma-
14 terial’ means any addition of dredged or fill material
15 into navigable waters and includes, without limita-
16 tion, any addition or redeposit of dredged or fill ma-
17 terials, including excavated materials, into the navi-
18 gable waters which is incidental to any activity, in-
19 cluding draining, mechanized landclearing, ditching,
20 channelization, or other excavation that has or would
21 have the effect of destroying or degrading any area
22 of navigable waters.”.

1 SEC. 6. PERMIT PROCESSING IMPROVEMENTS.

2 (a) PERMIT DECISION DEADLINES.—Section 404(a)
3 (33 U.S.C. 1344(a)), as amended by this Act, is amended
4 by adding the following new paragraphs:

5 “(3) Except as provided in paragraph (4), a de-
6 cision with respect to an application for a permit
7 under paragraph (1) shall be made not later than
8 the ninetieth day after the date the notice of such
9 application is published under paragraph (1).

10 “(4) The Secretary’s decision with respect to an
11 application for a permit under paragraph (1) may be
12 made after the ninetieth day referred to in para-
13 graph (3), only if—

14 “(A) with respect to issuance of the per-
15 mit, the Secretary is required under the Na-
16 tional Environmental Policy Act of 1969, as
17 amended, to issue an environmental impact
18 statement, in which case the decision shall be
19 made within thirty days of date on which the
20 requirements of that Act are met;

21 “(B) the permit application involves an ac-
22 tivity that may affect any species that is listed
23 or any critical habitat that is designated under
24 the Endangered Species Act of 1973, as amend-
25 ed, in which case the decision shall be made

1 within thirty days of the date on which the re-
2 quirements of that Act are met;

3 “(C) the Administrator, the Secretaries of
4 the Departments of Agriculture, the Interior,
5 Commerce, or Transportation, the head of an-
6 other appropriate Federal agency, or the Gov-
7 ernor of the State in which the activity occurs
8 requests that the decision be made after such
9 day, in which case the decision shall be made
10 not later than the one hundred and fiftieth day
11 after the date the notice of application is pub-
12 lished under paragraph (1);

13 “(D) the Secretary and the permit appli-
14 cant determine that additional time is needed to
15 evaluate such application; or

16 “(E) the decision is precluded as a matter
17 of law or procedures required by law.”.

18 (b) DEADLINES ON PROHIBITION OR RESTRICTION
19 OF ACTIVITIES BY ADMINISTRATOR.—Section 404(c) (33
20 U.S.C. 1344(c)) is amended by adding at the end the fol-
21 lowing new sentence: “The Administrator shall make any
22 determination under this subsection to prohibit or restrict
23 any discharge into navigable waters resulting from an ac-
24 tivity for which a permit may be issued under subsection
25 (a) not later than the one hundred and eightieth day after

1 the date of decision with respect to an application for such
2 a permit under subsection (a).”.

3 (c) ADMINISTRATIVE APPEAL OF PERMIT DECISIONS.—
4

5 (1) IN GENERAL.—Section 404(a) (33 U.S.C.
6 1344(a)), as amended by this Act, is amended by
7 adding at the end the following new paragraph:

8 “(5) The Secretary shall, after notice and an
9 opportunity for public comment, issue rules estab-
10 lishing procedures under which—

11 “(A) an applicant for a permit under para-
12 graph (1) or any person who participated in the
13 public comment process regarding such permit
14 application may appeal a decision under this
15 subsection with respect to such a permit; and

16 “(B) an appeal shall be heard and decided
17 by an official other than the person who made
18 the decision with respect to such a permit.”.

19 (2) DEADLINE FOR ISSUANCE OF RULES.—The
20 Secretary shall issue rules under section 404(a)(5)
21 (33 U.S.C. 1344(a)(5)), as amended by this Act, by
22 not later than one hundred eighty days after the
23 date of the enactment of this Act.

1 **SEC 7. GENERAL PERMIT IMPROVEMENTS.**

2 Section 404(e) (33 U.S.C. 1344(e)) is amended to
3 read as follows:

4 “(e)(1) **IN GENERAL.**—In carrying out the functions
5 of the Secretary under this section relating to the dis-
6 charge of dredged or fill material, the Secretary may, after
7 notice and opportunity for a public hearing, issue general
8 permits.

9 “(2) **CATEGORIES OF ACTIVITIES.**—General permits
10 may be issued on a State, regional, or nationwide basis
11 for any category of activities involving discharges of
12 dredged or fill material if the Secretary determines that
13 the activities in such category are similar in nature, will
14 cause only minimal adverse environmental effects when
15 performed separately, and will have only a minimal cumu-
16 lative adverse effect on the environment.

17 “(3) **STATE AND LOCAL PROGRAMS.**—

18 “(A) **IN GENERAL.**—A general permit may be
19 issued for an existing State, tribal, regional or local
20 regulatory program to avoid unnecessary duplication
21 of requirements by Federal, State, tribal, regional,
22 and local programs if the general permit—

23 “(i) requires that the State, tribal, re-
24 gional, or local regulatory program has jurisdic-
25 tion over the activities and waters within the
26 scope of the general permit;

14

1 “(ii) provides adequate safeguards to ensure that the State, tribal, regional, or local
2 regulatory program will have no more than
3 minimal cumulative impacts on the environment
4 and will provide at least the same degree of
5 protection for the navigable waters as that provided by this section;
6

7 “(iii) provides at least the same opportunity for public review, comment, and hearings
8 as that provided by this section; and
9

10 “(iv) includes provisions to provide an opportunity for the Secretary, the Administrator,
11 the Secretary of the Interior (acting through
12 the Director of the United States Fish and
13 Wildlife Service), and the Secretary of Commerce (acting through the Administrator of the
14 National Oceanic and Atmospheric Administration) to review permit decisions submitted to
15 the State, tribal, regional, or local regulatory agency to ensure that the requirements of this
16 subsection are met.
17

18 “(B) After December 31, 1996, a general permit shall not be issued or remain in effect for a local
19 or regional regulatory program unless the program
20 is part of a wetlands and watershed management
21
22
23
24
25

1 that approved under section 222 and the responsi-
2 sible unit of government has the legal authority and
3 scientific monitoring capability to issue, monitor
4 and enforce permits in compliance with the require-
5 ments of the Act and the terms and conditions of
6 the general permit.

7 "C. SWAMPBUSTLE.—A general permit may be is-
8 sued for discharges of dredged or fill material associated
9 with activities found by the Secretary of Agriculture, in
10 consultation with the Secretary of the Interior acting
11 through the Director of the United States Fish and Wild-
12 life Service, to be exempted from the neigibility pro-
13 visions of section 222 of the Food Security Act of 1985
14 by T.S.M. 222 pursuant to section 222 of and (1.
15 of that Act if the general permit—

16 "A. provides adequate safeguards to ensure
17 that the activities exempted will have no more than
18 minimal individual and cumulative impacts on the
19 environment, and

20 "B. includes provisions to provide an oppor-
21 tunity for the Secretary and the Administrator to re-
22 view determinations by the Secretary of Agriculture
23 to ensure that the terms and conditions of the gen-
24 eral permit and the requirements of this subsection
25 are met.

SECTION 101. REGULATIONS APPLICABLE TO GENERAL PERMITS—

(A) No general permit issued under this subsection shall be for a period of more than five years after the date of its issuance and such general permit may be renewed or modified by the Secretary after notice and opportunity to be heard is afforded hearing. The Secretary determines that the activities authorized by such general permit have an adverse impact on the environment or such activities are more appropriately authorized by individual permits of a State, Tribal or local government that failed to adequately monitor and control the individual and cumulative adverse effects of activities authorized by State, Tribal, regional or local program general permits issued under paragraph (3).

(B) Any general permit issued under this subsection shall—

(i) be based on the guidelines developed pursuant to subsection (b)(1); and

(ii) set forth requirements and standards which shall apply to any activity authorized by such permit, including specific enforcement requirements and standards for mitigation of ad-

1 verse impacts to wetlands and other navigable
2 waters.”.

3 **SEC. 8. COORDINATION AND CLARIFICATION OF PROGRAM**
4 **CONCERNING AGRICULTURAL ACTIVITIES.**

5 (a) COORDINATION WITH AGRICULTURAL PRO-
6 GRAMS.—Section 404(q) (33 U.S.C. 1344(q)) is amended
7 by inserting “(1)” after “(q)” and by adding the following
8 new paragraph:

9 “(2) Not later than one hundred and eighty
10 days after the date of enactment of this subsection,
11 the Secretary, the Administrator, the Secretary of
12 the Interior, and the Secretary of Agriculture shall
13 enter into agreements to develop consistent criteria
14 and procedures for making technical determinations
15 under subtitle C of title XII of the Food Security
16 Act of 1985 (16 U.S.C. 3821 et seq.) and this sec-
17 tion concerning wetlands located on agricultural
18 lands, including but not limited to the delineation of
19 wetlands and prior converted croplands and to pro-
20 vide information and education concerning these cri-
21 teria and procedures.”.

22 (b) EXEMPTION FOR PRIOR CONVERTED CROP-
23 LAND.—Section 404(f) (33 U.S.C. 1344(f)) is amended by
24 adding the following new paragraph:

1 “(3)(A) Areas determined in accordance with
2 subparagraph (B) to be prior converted cropland
3 shall not be considered to be navigable waters.

4 “(B) The Secretary, the Administrator, the
5 Secretary of Agriculture, and the Secretary of the
6 Interior shall promulgate regulations, after notice
7 and opportunity for public review and comment, for
8 identifying areas that meet the description under
9 subparagraph (A) for administering the programs
10 established under this section and subtitle C of title
11 XII of the Food Security Act of 1985 (16 U.S.C.
12 3821 et seq.).”

13 (c) OTHER EXEMPT WATERS AND AREAS.—Section
14 404(f) (33 U.S.C. 1344(f)), as amended by this Act, is
15 amended by adding the following new paragraph:

16 “(4)(A) For purposes of this section, the follow-
17 ing shall not be considered to be navigable waters—

18 “(i) nontidal drainage and irrigation
19 ditches excavated in uplands;

20 “(ii) artificially irrigated areas which
21 would revert to uplands if the irrigation ceased;

22 “(iii) artificial lakes or ponds created by
23 excavating or diking uplands to collect and re-
24 tain water, and which are used exclusively for
25 stock watering, irrigation, or rice growing;

1 “(iv) artificial reflecting or swimming pools
2 or other small ornamental bodies of water cre-
3 ated by excavating or diking uplands to retain
4 water for primarily aesthetic reasons;

5 “(v) water-filled depressions created in up-
6 lands incidental to construction activity and pits
7 excavated in uplands for the purpose of obtain-
8 ing fill, sand, or gravel, unless and until the
9 construction or excavation operation is aban-
10 doned and the resulting body of water meets
11 the definition of waters of the United States;
12 and

13 “(vi) artificial stormwater detention areas
14 and artificial sewage treatment areas that are
15 not modifications of navigable waters.”.

16 (d) EXEMPTED ACTIVITIES.—Section 404(f)(1) (33
17 U.S.C. 1344(f)(1)) is amended to read as follows:

18 “(f)(1) Except as provided in paragraph (2), the dis-
19 charge of dredged or fill material into navigable waters—

20 “(A) from normal farming, silviculture, and
21 ranching activities, such as haying, grazing, plowing,
22 seeding, cultivating, minor drainage, harvesting for
23 the production of food, fiber, and forest products, or
24 upland soil and water conservation practices;

1 “(B) for the purpose of maintenance, including
2 emergency reconstruction of recently damaged parts,
3 of currently serviceable structures such as dikes,
4 dams, levees, groins, riprap, breakwaters, causeways,
5 bridge abutments or approaches, and transportation
6 structures;

7 “(C) for the purpose of construction or mainte-
8 nance of farm or stock ponds or irrigation ditches,
9 or the maintenance of drainage ditches;

10 “(D) for the purpose of construction of tem-
11 porary sedimentation basins on a construction site
12 which does not involve a discharge of fill into navi-
13 gable waters;

14 “(E) for the purpose of construction or mainte-
15 nance of farm roads or forest roads, or temporary
16 roads for moving mining equipment, where such
17 roads are constructed and maintained, in accordance
18 with best management practices, to assure that flow
19 and circulation patterns and chemical and biological
20 characteristics of the navigable waters are not im-
21 paired, that the reach of the navigable waters is not
22 reduced, and that any adverse effect on the aquatic
23 environment will otherwise be minimized; or

24 “(F) resulting from any activity with respect to
25 which a State has an approved program under sec-

1 tion 208(b)(4) which meets the requirements of sub-
2 paragraphs (B) and (C) of such section,
3 is not prohibited by or otherwise subject to regulation
4 under this section or section 301(a) or 402 of this Act
5 (except for effluent standards or prohibitions under sec-
6 tion 307).”.

7 (e) COOPERATION WITH SECRETARY OF AGRICULTURE.—Section 404(f) (33 U.S.C. 1344(f)), as
8 amended by this Act, is amended by adding the following
9 new paragraph:
10

11 “(5) In carrying out this subsection, the Sec-
12 retary and the Administrator shall coordinate their
13 efforts with the Secretary of Agriculture.”.

14 **SEC. 9. MITIGATION BANKS.**

15 Section 404 (33 U.S.C. 1344) is amended by adding
16 at the end thereof the following new section:

17 “(u) MITIGATION BANKS.—

18 “(1) ESTABLISHMENT.—

19 “(A) IN GENERAL.—Not later than one
20 year after the date of the enactment of the
21 Wetlands Conservation and Regulatory Im-
22 provements Act of 1993, the Secretary and the
23 Administrator shall jointly issue rules, after no-
24 tice and opportunity for public review and com-

1 ment, for establishment, use, maintenance and
2 oversight of mitigation banks.

3 “(B) PROVISIONS AND REQUIREMENTS.—
4 Rules for establishment, use, maintenance and
5 oversight of mitigation banks shall ensure that
6 mitigation banks—

7 “(i) comply with the guidelines under
8 subsection (b)(1);

9 “(ii) to the extent practicable and en-
10 vironmentally desirable, provide in-kind re-
11 placement of lost wetlands functions and
12 be located on or in proximity to the same
13 watershed as impacted wetlands;

14 “(iii) provide for the long-term secu-
15 rity of ownership interests of wetlands and
16 uplands on which projects are conducted to
17 protect the wetlands values associated with
18 the mitigation bank;

19 “(iv) employ consistent and scientif-
20 ically-sound methods to determine debits
21 by evaluating wetlands functions and
22 project impacts at the sites of proposed
23 permits for discharges of dredged or fill
24 material pursuant to this section, and
25 methods to be used to determine credits

1 based upon wetlands functions, values, and
2 acreages at the sites of mitigation banks;

3 “(v) base fee charges for participation
4 in the mitigation bank on the full costs of
5 replacing lost wetlands functions and acre-
6 age, including the costs of land acquisition,
7 wetlands establishment, management
8 measures, long-term maintenance, monitor-
9 ing, and protection, potential remediation
10 of project failure, and other relevant fac-
11 tors;

12 “(vi) shall specify responsibilities for
13 long-term monitoring, maintenance, and
14 protection; and

15 “(vii) shall provide opportunity for
16 public review of proposals for mitigation
17 banks through one or more opportunities
18 for public notice and comment.

19 “(2) DEFINITION.—As used in this subsection,
20 the term ‘mitigation bank’ means wetlands restora-
21 tion projects undertaken by one or more parties, in-
22 cluding private and public entities, expressly for the
23 purpose of providing, in advance, mitigation com-
24 pensation credits to fully offset reasonably foresee-
25 able wetlands losses from future discharges of

1 dredged or fill material into the navigable waters,
2 where compensatory mitigation at the project site is
3 not practicable or is not environmentally desirable.”.

4 **SEC. 10. GRANT AUTHORITY FOR RESEARCH, INVESTIGA-**
5 **TION, AND TRAINING.**

6 Section 104 (33 U.S.C. 1254) is amended by adding
7 at the end the following new subsection:

8 “(v) The Secretary of the Army, acting through the
9 Chief of Engineers, is authorized to make grants to and
10 enter into cooperative agreements with State agencies,
11 interstate agencies, other public or non-profit agencies, in-
12 stitutions, organizations and individuals for purposes stat-
13 ed in paragraph (1) of subsection (a) of this section.”.

14 **SEC. 11. REPORTS AND ANALYSIS.**

15 (a) **EFFECTS OF PROGRAM ON WETLANDS.**—Section
16 404(a) (33 U.S.C. 1344(a)), as amended by this Act, is
17 amended by adding at the end the following new para-
18 graph:

19 “(6)(A) The Secretary, the Administrator, and
20 the States which have a permit program approved
21 under subsection (h)(2) shall collect and make avail-
22 able to the Congress and the public every two years
23 information regarding the effects on navigable wa-
24 ters of activities conducted under permits (including

1 general permits) issued pursuant to this section,
2 including—

3 “(i) the number of permit applications that
4 were granted, withdrawn or denied;

5 “(ii) estimates of the total acreage of navi-
6 gable waters affected adversely by issuance of
7 individual permits;

8 “(iii) estimates of the acreage of navigable
9 waters affected by each general permit, in order
10 to determine whether the individual and cumu-
11 lative adverse environmental effects of activities
12 authorized by each general permit are minimal;
13 and

14 “(iv) estimates of the acreage of navigable
15 waters preserved or restored through mitigation
16 of permitted activities and the rate of compli-
17 ance with such mitigation requirements.

18 “(B) MONITORING.—For purposes of preparing
19 reports under this paragraph, the Secretary, the Ad-
20 ministrator, and the Secretary of the Interior shall
21 jointly monitor the achievement of the policy stated
22 in section 101(a)(8) under permits issued under this
23 section.”.

24 (b) NEEDS ANALYSIS.—

1 (1) IN GENERAL.—Not later than ninety days
2 after the date of the enactment of this Act, the
3 Comptroller General of the United States shall sub-
4 mit to the Congress an analysis of the needs of the
5 Department of the Army, the Environmental Protec-
6 tion Agency, the United States Fish and Wildlife
7 Service, and the National Marine Fisheries Service
8 for additional personnel, administrative resources,
9 and funding to improve implementation of section
10 404 of the Federal Water Pollution Control Act (33
11 U.S.C. 1344) and to carry out the provisions of this
12 Act.

13 (2) CONTENTS.—The analysis submitted under
14 this subsection shall—

15 (A) give particular emphasis to the needs
16 of the agencies identified in paragraph (1) with
17 respect to improving and expediting wetlands
18 delineation and section 404 permitting, includ-
19 ing advance planning and early consultation;

20 (B) include specific recommendations re-
21 garding additional appropriations and staffing
22 necessary for that improvement and expedition;
23 and

24 (C) include specific recommendations con-
25 cerning allocation of additional appropriations

1 and staffing to the regional, district and field
2 offices of the agencies identified in paragraph
3 (1) according to the workload of those offices.

4 **SEC. 12. WETLANDS CONSERVATION, MANAGEMENT AND**
5 **RESTORATION.**

6 (a) **FUNDING FOR STATE WETLANDS CONSERVATION**
7 **PLANS.**—Section 104(b)(3) (33 U.S.C. 1254(b)(3)) is
8 amended by inserting immediately before the semicolon “
9 and for the development and implementation of State wet-
10 lands conservation plans under section 321”.

11 (b) **WETLANDS CONSERVATION, MANAGEMENT AND**
12 **RESTORATION.**—Title III (33 U.S.C. 1311 et seq.) is
13 amended by the adding at the end the following new sec-
14 tions:

15 **“SEC. 321. STATE WETLANDS CONSERVATION PLANS.**

16 **“(a) DEVELOPMENT AND IMPLEMENTATION ASSIST-**
17 **ANCE.**—Subject to the requirements established by the
18 Administrator and this section, the Administrator is au-
19 thorized to make grants to States to assist in the develop-
20 ment and implementation of State wetlands conservation
21 plans.

22 **“(b) CONTENTS OF PLANS.**—To qualify for assist-
23 ance under subsection (a), a State wetlands conservation
24 plan shall generally include—

1 “(1) management strategies and policies for
2 achieving within the State the goal under section
3 101(a)(8);

4 “(2) an inventory of wetlands resources in the
5 State;

6 “(3) a description of the major causes of wet-
7 lands loss and degradation in the State, including an
8 estimate of historical wetlands losses;

9 “(4) a description of State and local govern-
10 ment programs applying to wetlands resources in the
11 State;

12 “(5) identification of sites in the State with
13 wetlands restoration potential;

14 “(6) identification of riparian areas in the State
15 with restoration potential;

16 “(7) a schedule for implementing the elements
17 of the plan;

18 “(8) a mechanism for monitoring achievement
19 of the stated goals of the plan;

20 “(9) measures to assist in the development of
21 wetlands and watershed management plans under
22 section 322; and

23 “(10) involvement of local public and private
24 agencies and organizations which have expertise in

1 wetlands conservation or land use planning or devel-
2 opment.

3 **“SEC. 322. WETLANDS AND WATERSHED MANAGEMENT**
4 **PLANS.**

5 **“(a) DESIGNATION AND APPROVAL OF MANAGEMENT**
6 **UNITS AND ENTITIES.—**

7 **“(1) IN GENERAL.—**The Governor of a State
8 may at any time designate wetlands and associated
9 land areas within the State as a wetlands and water-
10 shed management unit.

11 **“(2) UNIT BOUNDARIES.—**The boundaries of
12 each wetlands and watershed management unit shall
13 be identified on a map and shall be based on the
14 best available scientific information and, to the ex-
15 tent practicable, consistent with the hydrological
16 units identified by the United States Geological Sur-
17 vey of the Department of the Interior as the most
18 appropriate units for planning purposes.

19 **“(3) MANAGEMENT ENTITY.—**The Governor of
20 a State shall determine the entity responsible for de-
21 veloping and implementing a plan for each wetlands
22 and watershed management unit designated under
23 this section. The management entity may be an
24 agency of State government, a local government
25 agency, a substate regional planning organization, a

1 conservation district or other natural resource man-
2 agement district, or any other public or nonprofit
3 entity which has adequate powers to carry out the
4 responsibilities authorized by this section.

5 “(4) APPROVAL.—Each designation of a wet-
6 lands and watershed management unit and a cor-
7 responding management entity under this subsection
8 shall be submitted to the Administrator and the Sec-
9 retary of the Army, acting through the Chief of En-
10 gineers (hereinafter in this section referred to as
11 ‘Secretary’), for approval. The Administrator and
12 the Secretary shall approve the designation of a
13 management unit and entity not later than one hun-
14 dred and eighty days after the date of submittal, if
15 the designation meets the requirements of this sec-
16 tion. If the Administrator and the Secretary dis-
17 approve the designation, they shall notify the State
18 in writing of the reasons for disapproval. The State
19 may resubmit the designation amended to meet the
20 objections of the Administrator and the Secretary.

21 “(b) DEVELOPMENT AND APPROVAL OF A WET-
22 LANDS AND WATERSHED MANAGEMENT PLAN.—

23 “(1) PLAN DEVELOPMENT.—An approved man-
24 agement entity shall be eligible to receive funding
25 pursuant to section 106(h), 205(j), 319(e), or

1 604(b) (or any combination thereof) for the follow-
2 ing activities in the development of a wetlands and
3 watershed management plan:

4 “(A) Inventory and mapping of—

5 “(i) all navigable waters within the
6 proposed wetlands and watershed manage-
7 ment unit; and

8 “(ii) potential wetlands restoration
9 sites.

10 “(B) Assessment of the functions and rel-
11 ative value of wetlands within the wetlands and
12 watershed management unit.

13 “(C) Categorization of activities according
14 to the degree to which they have an adverse ef-
15 fect on navigable waters within the wetlands
16 and watershed management unit.

17 “(D) Identification and adoption of pro-
18 grams, policies and measures to achieve within
19 the wetlands and watershed management unit
20 the goal under section 101(a)(8).

21 “(E) Identification of potential mitigation
22 banks.

23 “(F) Identification and adoption of meas-
24 ures to integrate wetlands planning and man-
25 agement with broader water resource and land

1 use planning and management, including flood-
2 plain management, water supply, stormwater
3 management, and control of point and nonpoint
4 source pollution.

5 “(G) Identification and adoption of meas-
6 ures to increase consistency in Federal, State,
7 and local wetlands definitions, delineation meth-
8 odologies, and permitting approaches.

9 “(H) Identification and establishment of
10 management strategies for restoring wetlands
11 on a watershed basis.

12 “(2) PUBLIC PARTICIPATION.—Each State shall
13 establish procedures, including the establishment of
14 scientific and citizens’ advisory committees, to en-
15 courage the public to participate in developing wet-
16 lands and watershed management plans under this
17 section.

18 “(3) APPROVAL OF PLANS.—

19 “(A) SUBMISSION OF PLAN.—The Gov-
20 ernor of a State may submit to the Adminis-
21 trator for approval a wetlands and watershed
22 management plan developed pursuant to this
23 section.

24 “(B) DECISION ON PLAN.—The Adminis-
25 trator and the Secretary shall, in consultation

1 with the Secretaries of the Interior, Agriculture,
2 and Commerce, and after notice and oppor-
3 tunity for public comment, approve or dis-
4 approve a wetlands and watershed management
5 plan within one hundred and eighty days of the
6 date the plan is submitted by a Governor pur-
7 suant to this paragraph.

8 “(C) PLAN REQUIREMENTS.—The Admin-
9 istrator and the Secretary shall approve a wet-
10 lands and watershed management plan submit-
11 ted pursuant to this paragraph if they deter-
12 mine that the plan satisfies each of the follow-
13 ing conditions—

14 “(i) the plan has been developed for a
15 wetlands and watershed management unit
16 designated and approved pursuant to sub-
17 section (a);

18 “(ii) the management entity with re-
19 sponsibility to carry out the plan has been
20 designated and approved pursuant to sub-
21 section (a) and has the legal authority and
22 financial resources to carry out the plan;

23 “(iii) the plan contains an inventory
24 and mapping of—

34

1 “(I) all navigable waters within
2 the proposed wetlands and watershed
3 management unit; and

4 “(II) potential wetlands restora-
5 tion sites with a description of their
6 intended functions upon completion
7 and the time required for completion;

8 “(iv) the management entity has
9 adopted programs, policies and measures
10 that will ensure achievement within the
11 watershed of the goal under section
12 101(a)(8); and

13 “(v) the plan provides that the man-
14 agement entity will report to the Adminis-
15 trator, the Secretary and the public every
16 two years on implementation of the plan
17 and on the losses and gains in functions
18 and acres of wetlands within the wetlands
19 and watershed management unit.

20 “(c) PLAN IMPLEMENTATION AND REVISION.—

21 “(1) PLANNING AND IMPLEMENTATION SCHED-
22 ULE.—Each wetlands and watershed management
23 plan submitted and approved under subsection (b)
24 shall include a planning and implementation sched-
25 ule for a period of at least ten years.

1 “(2) DURATION OF APPROVAL.—The approval
2 of a plan by the Administrator and the Secretary
3 shall apply for a period not to exceed ten years.

4 “(3) PLAN REVISIONS.—A revised and updated
5 plan may be submitted for approval prior to the ex-
6 piration of the period specified in paragraph (2) pur-
7 suant to the same conditions and requirements that
8 apply to any initial plan for a wetlands and water-
9 shed management unit that is approved pursuant to
10 subsection (b).

11 “(d) INCENTIVES FOR WETLANDS AND WATERSHED
12 MANAGEMENT PLANNING.—

13 “(1) FUNDING OF PROJECTS AND ACTIVI-
14 TIES.—Projects and activities identified in an ap-
15 proved plan as necessary for achievement within the
16 wetlands and watershed management unit of the
17 goal under section 101(a)(8), and not otherwise re-
18 quired by this or other Federal law, shall—

19 “(A) be eligible for funding under section
20 603(c)(1)(F);

21 “(B) be included in any needs assessment
22 conducted pursuant to section 516; and

23 “(C) be eligible for funding under section
24 604(a)(2)(C).

1 “(2) EXPEDITED PERMIT REVIEW.—Notwith-
2 standing section 404(a), a decision under that sec-
3 tion with respect to a completed application for a
4 permit for discharge of dredged or fill material into
5 navigable waters within a designated wetlands and
6 watershed unit and subject to an approved wetlands
7 and watershed management plan shall be made not
8 later than the sixtieth day after the date the notice
9 of such application is published under section
10 404(a)(1), unless—

11 “(A) with respect to issuance of the per-
12 mit, the Secretary is required under the Na-
13 tional Environmental Policy Act of 1969 to
14 issue an environmental impact statement;

15 “(B) the permit application involves an ac-
16 tivity that may affect any species that is listed
17 or any critical habitat that is designated under
18 the Endangered Species Act of 1973;

19 “(C) the Administrator, the Secretaries of
20 the Departments of Agriculture, the Interior,
21 Commerce, or Transportation, the head of an-
22 other appropriate Federal agency, or the Gov-
23 ernor of the State in which the activity occurs
24 requests that the decision be made after such
25 day, in which case the decision shall be made

1 not later than the ninetieth day after the date
2 the notice of application is published under sec-
3 tion 404(a)(1);

4 “(D) the Secretary and the permit appli-
5 cant determine that additional time is needed to
6 evaluate such application; or

7 “(E) the decision is precluded as a matter
8 of law or procedures required by law.

9 “(3) MITIGATION BANKS.—

10 “(A) At the request of an approved man-
11 agement entity, the Secretary and the Adminis-
12 trator shall provide assistance in establishment
13 of mitigation banks under this section and sec-
14 tion 404(u) by the approved management entity
15 to achieve the goal under section 101(a)(8)
16 within an approved wetlands and watershed
17 management unit and in accordance with an
18 approved wetlands and watershed management
19 plan.

20 “(B) Establishment and oversight of miti-
21 gation banks within an approved wetlands and
22 watershed management unit and in accordance
23 with an approved wetlands and watershed man-
24 agement plan shall be eligible for funding under
25 paragraph (1).

1 “(4) PROGRAMMATIC GENERAL PERMITS.—

2 After December 31, 1996, a general permit may be
3 issued or remain in effect under section 404(e)(3)
4 for a local or regional regulatory program if the pro-
5 gram is part of a wetlands and watershed manage-
6 ment plan approved under section 322.

7 “(f) RESEARCH PROGRAM.—The Administrator, in

8 cooperation with the Secretary, the Secretary of the Inte-
9 rior and other appropriate Federal, State, and local gov-
10 ernment entities, shall initiate a research program of wet-
11 lands and watershed management. The research program
12 shall include—

13 “(1) study of the functions, values and manage-
14 ment needs of altered, artificial, and managed wet-
15 lands systems;

16 “(2) study and development of techniques and
17 methods for determining and analyzing the functions
18 and values of different types of wetlands;

19 “(3) study and development of techniques for
20 managing and restoring wetlands within a watershed
21 context;

22 “(4) study and development of techniques for
23 better coordinating and integrating wetlands protec-
24 tion, floodplain management, stormwater manage-

1 ment, point and nonpoint source pollution controls,
2 and water supply planning on a watershed basis;

3 “(5) development of criteria for identifying wet-
4 lands restoration sites on a watershed basis; and

5 “(6) recommendation of procedures and ecologi-
6 cal criteria for wetlands restoration.

7 **“SEC. 323. INTERGOVERNMENTAL WETLANDS COORDINAT-
8 ING COMMITTEE.**

9 “(a) **ESTABLISHMENT.**—Not later than ninety days
10 after the date of the enactment of the Wetlands Conserva-
11 tion and Regulatory Improvements Act of 1993, the Ad-
12 ministrator shall establish a committee to coordinate Fed-
13 eral, State, and local government wetlands policies (here-
14 inafter in this section referred to as the ‘Coordinating
15 Committee’).

16 “(b) **FUNCTIONS.**—The Coordinating Committee
17 shall—

18 “(1) assist in coordinating Federal, State, and
19 local wetlands policies;

20 “(2) make comments available to the Secretary
21 of the Army, acting through the Chief of Engineers,
22 or the Administrator regarding existing and pro-
23 posed regulatory, policy, program, or technical guid-
24 ance affecting wetlands systems;

1 “(3) in cooperation with the Secretary of the
2 Army, acting through the Chief of Engineers, and
3 the Administrator, assist in the review and field-test-
4 ing of technical and scientific methods utilized in
5 wetlands regulatory and non-regulatory program;

6 “(4) encourage the development and implemen-
7 tation of State wetlands conservation plans pursuant
8 to section 321;

9 “(5) encourage the development and implemen-
10 tation of wetlands and watershed management plans
11 pursuant to section 322; and

12 “(6) assist in the development of a national
13 strategy for the restoration of wetlands ecosystems
14 pursuant to section 324.

15 “(c) MEMBERSHIP.—The Committee shall be com-
16 posed of eighteen members as follows:

17 “(1) The Administrator.

18 “(2) The Secretary of the Army, acting through
19 the Chief of Engineers.

20 “(3) The Secretary of the Interior, acting
21 through the Director of the United States Fish and
22 Wildlife Service.

23 “(4) The Secretary of Agriculture, acting
24 through the Chief of the Soil Conservation Service.

1 “(5) The Under Secretary of Commerce for
2 Oceans and Atmosphere.

3 “(6) One individual appointed by the Adminis-
4 trator who shall represent the National Governor’s
5 Association.

6 “(7) One individual appointed by the Adminis-
7 trator who shall represent the National Association
8 of Counties.

9 “(8) One individual appointed by the Adminis-
10 trator who shall represent the National League of
11 Cities.

12 “(9) Ten State wetlands experts selected and
13 appointed by the Administrator from among nomina-
14 tions submitted by the Governors of each State.

15 “(d) TERMS.—Each member appointed pursuant to
16 paragraph (6), (7), (8), or (9) of subsection (c) shall be
17 appointed for a term of two years.

18 “(e) VACANCIES.—A vacancy in the Coordinating
19 Committee shall be filled, on or before the thirtieth day
20 after the vacancy occurs, in the manner in which the origi-
21 nal appointment was made.

22 “(f) PAY.—Members shall serve without pay, but may
23 receive travel expenses (including per diem in lieu of sub-
24 sistence) in accordance with sections 5702 and 5703 of
25 title 5, United States Code.

1 “(1) be designed to help coordinate and pro-
2 mote restoration efforts by Federal, State, regional,
3 and local governments and the private sector;

4 “(2) inventory and evaluate existing restoration
5 efforts and make suggestions for the establishment
6 of additional efforts and funding mechanisms for
7 such efforts consistent with existing Federal, State
8 and local programs and plans;

9 “(3) evaluate the role played by, and success of,
10 wetlands restoration efforts in both regulatory and
11 nonregulatory contexts;

12 “(4) evaluate current efforts to monitor restora-
13 tion efforts;

14 “(5) periodically report on the status of wet-
15 lands restoration efforts; and

16 “(6) identify regulatory and nonregulatory ob-
17 stacles to wetlands ecosystem restoration and rec-
18 ommend methods to remove such obstacles.”.

○

A P P E N D I X

**GENERAL STATEMENTS SUBMITTED FOR
THE RECORD**



American Public Power Association

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**Statement of
 American Public Power Association
 to the
 Senate Clean Water, Fisheries and Wildlife Subcommittee
 of the Senate Environment and Public Works Committee
 on S. 1114, a bill to amend the Clean Water Act**

August 20, 1993

The American Public Power Association, the national service organization representing nearly 2,000 publicly owned electric utilities, appreciates this opportunity to present public power's views on the Section 401 certification process for hydroelectric generation projects as authorized under the Clean Water Act of 1972. Legislation to authorize this expansion has been introduced by Environment and Public Works Committee chair Max Baucus (D-MT) and ranking member John Chafee (R-RI), in the form of S. 1114.

APPA supports the reauthorization of the Clean Water Act, but opposes the inclusion of provisions in S. 1114 that would expand state authority to regulate water use, in addition to water quality, in the Section 401 Water Quality Certification process. Enactment of any provision to expand the water quality certification process to issues beyond the protection of water quality could disrupt the Federal Energy Regulatory Commission's (FERC) hydroelectric licensing and relicensing process and jeopardize power production capacity at existing federally licensed projects. In addition, APPA objects to language in the bill that would severely limit the activities of federal hydropower projects by subjecting such projects to new watershed planning activities governed by the states.

The Importance of Hydropower Generation

APPA has considerable interest in this legislation because hydro facilities constitute nearly 23 percent of public power's total installed generating capacity. The combined capacity of all public power hydro projects is more than 18,000 megawatts out of a national capacity figure from all FERC-licensed hydro projects of approximately 47,000 megawatts.

Hydroelectric generation is a clean, renewable source of energy, whose use limits the emissions that would otherwise result from the burning of fossil fuels. In fact, hydropower resources have the potential to provide a greater portion of the nation's electric power needs without any additional emissions of carbon dioxide, the most commonly-known greenhouse gas. The development of additional hydropower resources from existing projects and non-power dams could offset carbon emissions 6 million metric tons per year by the year 2000. Other special characteristics of hydropower include: a) use of an endlessly replaceable inflation-free fuel--falling water supplied by rain and snow; b)

potential plant life of as long as 100 years, or more, with stable prices; c) environmental advantages stemming from a lack of the need to transport and store fuel and waste; d) low outage rates and high reliability; e) ability to store electricity in the form of impounded water; f) 90 percent efficiency (compared to 35% for a fossil-fueled steam plant); g) employment of an indigenous North American energy source of "juice for jobs"; and h) multi-purpose nature involving not only power production but also irrigation, flood control, navigation, municipal and industrial water supply, fisheries improvement, salinity control, wildlife enhancement and recreation.

Section 401 Water Quality Certification Process

APPA believes that it is not necessary to expand the 401 permit process to allow states to withhold their water quality certification of federally licensed projects if the project does not "allow for the protection, attainment, and maintenance of designated uses." (Section 602 of S. 1114). Our position is based on the simple fact that there are other more appropriate mechanisms already available within the hydro licensing process that accomplish the same objectives without jeopardizing energy production or regional energy strategies. The current process provides the necessary framework to resolve differences among competing uses and interests of the nation's waterways.

In establishing the hydroelectric licensing process under the Federal Power Act, Congress carefully weighed the need to balance competing uses for the nation's waterways. It took the approach that all concerns and issues needed to be brought to the same table in the licensing process, with a single decision-maker weighing all factors and reaching a balanced decision. FERC was given this authority. Some states have wanted to unravel the unified approach that Congress took and to assert their own authority to over-ride FERC's authority. In implementing the Clean Water Act, states would have a significantly more narrow focus of the issues. For example, the state's consideration of water quality would not include energy, reservoir recreational opportunities or water supplies.

The piecemeal approach to licensing advocated by states will never work. Congress has always recognized the need for a comprehensive approach that balances competing uses on not only an intrastate but interstate basis.

In testimony APPA provided to the full Committee in July, 1991, we submitted that hydro projects have far reaching effects beyond individual state interests. It is as true now as it was then. In the Pacific Northwest region for example, regulation of unilaterally imposed, single purpose constraints, such as minimum flow requirements, could have impacts far beyond an individual project. Such requirements could affect not only the individual project upon which they are imposed, but potentially every project and utility in the entire coordinated system. These effects are felt across state and international boundaries and could result in the disruption of the economic viability of projects hundreds of miles downstream, impacting thousands of communities and the people residing within them.

Proponents of expanding the Section 401 permit process on hydro projects argue that environmental values will receive better treatment by the states than from FERC. The fact is that disjointed operation of the rivers will result in more environmental degradation than will be the case with coordinated

operation. Further, by law, FERC must explicitly consider environmental values in the licensing process.

The congressional mandate to consider environmental values was substantially strengthened by the passage of the Electric Consumers Protection Act (ECPA) of 1986--a law that requires FERC to balance carefully environmental factors with power generation needs in rendering its license decisions. Under ECPA, there have been a number of cases in which FERC has placed more stringent environmental conditions on a license than the state had required under the project's approved 401 permit.

APPA does not question the value of coordinating the policy objectives of environmental statutes, or belittle the responsibility of appropriate state and federal agencies to steward the nation's precious resources. However, ensuring that natural resources are used for the maximum public benefit requires that one agency, not a multitude of agencies, has the ultimate authority to review the project and render a decision.

The need to expand the 401 certification process beyond the issue of pure water quality has yet to be proven. There is no clear and convincing evidence that the current process does not work, or that the process works to the detriment of the states or environmental interests. The FERC licensing process provides an appropriate, coordinated, and balanced public policy process that permits competing uses of the nation's waterways to be appropriately considered. To set up any other procedure would be unwise and, most importantly, would run counter to the public interest.

Watershed Management Plans

APPA is concerned with the provision from Section 302, watershed management plans, which proposes to make each activity of a federal agency that affects land use, water quality, or the natural resources within a watershed planning unit for which a plan has been approved be carried out in a manner that is consistent with the policies established in the plan. An exemption to this requirement will be allowed only when the President determines that the federal activity in question is in the paramount interest of the United States.

Our concern is that this provision could severely limit the activities of federal hydropower projects. Affected projects include those operated by the Corps of Engineers and the Bureau of Reclamation. Power produced by these projects is sold primarily to public power systems and rural electric cooperatives by the U.S. Department of Energy's Power Marketing Administrations.

The questions we ask of this provision include whether the management plan will have independent regulatory effect apart from current state water quality standards, and who makes the determination that each federal activity will be carried out in a manner consistent with the newly-established watershed management plans.

In general, APPA believes that the creation of voluntary watershed management plans submitted by the states and approved by the Environmental Protection Agency Administrator could enhance overall efforts to identify problems associated with water quality within the designated watershed and aid in the

selection of measures to meet planning goals. However, if Section 302 is intended to require a second tier state evaluation of whether a proposed federal activity would meet state water quality standards, it could result in duplicative and expanded state authority in a process presently laden with layers of regulatory review. Under such a process, each state could strip federal agencies of their authority to comprehensively review a proposed project's affects on a waterway and could ultimately preclude beneficial development of our nation's waterways.

APPA agrees with the National Hydropower Association's recommendation that "any independent consideration of the consistency of a proposed activity with the state watershed management plan should be conducted by the federal agencies responsible with authorizing the relevant activity. The plans should be taken into account with deference by the federal agency in making its determination of the public interest in acting on a specific proposal."

APPA is additionally concerned about what Section 302 intended in allowing the Governor to select, as one option, a "non-profit entity with the capacity to carry out the responsibilities authorized by this section (Watershed Management Plan, Section 302)." We question the logic behind the option of selecting a non-profit entity to handle such elevated regulatory responsibilities and suggest that such an entity be one that has legal authority and financial resources and experience to fulfill its management responsibilities.

Lastly, the requirement that any federal activity shall be consistent with watershed management plans and may be exempted only on the basis of a Presidential exemption strikes us as a particularly harsh obstacle to overcome. We question the rationale behind this exemption provision and welcome the opportunity to more fully discuss the problems and potential merits behind structuring a more reasonable alternative.

**Improving Water Resource Management in the United States:
Suggestions for Reauthorizing the Clean Water Act***

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Prepared for the Committee on the Environment and Public Works
U.S. Senate

23 July 1993

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**Improving Water Resource Management in the United States:
Suggestions for Reauthorizing the Clean Water Act***

Robert W. Hahn

1. Introduction

Thank you for inviting me to testify.

The purpose of my presentation is to persuade you that there is an alternative to traditional water quality regulation that is, as the commercial says, "less filling and tastes great." We now have the know-how to achieve improved levels of water quality at lower cost to the public, provided that you are willing to embark on a new approach to regulating water.

I have spent the last ten years trying to develop and implement more effective approaches for resource and environmental management throughout the world. A central focus of my recent work has been on the development of economic approaches for improving water quality and water management. I attach an op-ed from the New York Times that illustrates the kind of market-based approaches that I would like to see encouraged in the reauthorization of the Clean Water Act. It is a proposal to reduce phosphorus loads to the Everglades through introduction of a market in transferable restoration credits. The proposal is very similar in structure to the 1990 Clean Air Act provisions for cutting sulfur dioxide emissions by 10 million tons. The idea is to give industry greater flexibility in achieving ambitious environmental goals, thus saving money and, in some cases, jobs.

I would like to begin my presentation with a quotation from a great, and now defunct, economist. Joan Robinson once asked: "Why is there litter in the public park, but no litter in my back garden?" The answer, of course, lies with incentives -- each of us has a direct incentive to keep our backyard clean. And while each of us would like to see the park kept clean, we would prefer that other people do it while we are out on the beach getting a sun tan.

The same problem arises in managing U.S. water resources, the subject of my remarks today. Because we collectively own most of our major water bodies, none of us has an incentive to take care of these resources the way we would take care of our own home. The problem for Congress is, thus, to change the incentive structure so that individual consumers, governments, and businesses have a direct stake in taking better care of our precious water resources.

There are basically two approaches to changing the incentive structure to achieve better management of water resources. The first is to sell off major public waterways, including rivers, lakes and streams. Putting these assets in private hands has the potential to improve their use provided property rights for both water

quality and quantity are well-defined and enforceable. In this case, the new owners of these assets would have a very strong incentive to treat these water resources just like they treat their own backyard. That is, they would have an incentive to keep the water body clean and allow people to use the water body only if they paid a price that reflects the value of the resource.

Privatizing water resources could also start a political firestorm, if not a revolution. Thus, I will not advocate it here today.

Instead, I will focus on a second approach to improving the management of resources -- the introduction of "economic" approaches for improving the public management of water resources. Within the economic approach, there are two fundamental issues that need to be addressed -- the first is the identification of appropriate goals for water quality and water use; the second is to choose appropriate methods for achieving goals.

The choice of goals for water quality should depend, among other things, on the economic benefits associated with consuming or using the water resource as well as the economic costs of providing that resource. The benefits include preservation of species habitat, recreational uses such as fishing, swimming and boating, commercial uses, the ability to use the resource as a drinking water supply, and the satisfaction that comes from knowing waterways are clean.

2. Introducing Cost-Benefit Analysis

In conventional cost-benefit analysis, standards are intended to be set so that the incremental benefit from cleaning up the water just equals the incremental cost. Admittedly, these concepts are difficult to quantify, particularly on the benefit side. Nonetheless, it is absolutely imperative that efforts be made to quantify these concepts if clean water policy is to be developed in a way that is likely to lead to improvements in our standard of living.

The U.S. Environmental Protection Agency (EPA) has not devoted significant resources to developing analyses that suggest where regulatory efforts are best focused under the Clean Water Act. The most comprehensive analysis of the benefits and costs of current plans to achieve the objectives of the Clean Water Act has been performed by Lyon and Farrow (1993). These authors argue that in many current implementation plans, the incremental costs of improving water quality exceed the incremental benefits. This means that many of the standards and regulatory methods that EPA has promulgated to date may be wasteful in the sense that they actually lower our average standard of living. At the same time, there may be specific instances of heavily polluted and/or heavily used water bodies where significant improvements in water quality are well worth the cost.

The preliminary results by these authors and results from earlier studies suggest that more attention needs to be given to doing cost-benefit analysis so that Congress can be certain we are focusing on the right water problems in the right water bodies.

Recommendation 1: EPA should commission a state-of-the-art cost-benefit analysis of the current Clean Water Act by scientists and social scientists so that the political debate on Clean Water Act reauthorization can be better informed. This analysis should attempt to point out where standards could benefit from tightening and where standards could benefit from being relaxed.

The analysis also should identify key areas of uncertainty in the estimation of benefits so that decision makers can make more informed decisions about appropriate standards. At present, relatively little is known about the dose-response function for many water contaminants or how people value clean water that they, themselves, may not use.

Recommendation 2: EPA should develop a database that permits a more refined assessment of the benefits and costs of the Clean Water Act.

EPA should be required to submit a report to Congress every two years that addresses the benefits and costs of controlling different pollutants in different waterways.

The second recommendation is similar to a provision in the 1990 Clean Air Act Amendments, which calls for a cost-benefit analysis of selected statutes in the Act. Without such information, Congress will not be in a position to make informed decisions about the economic consequences of their proposed statutes.

3. An Overview of Economic Incentives

Once a standard has been chosen, the question arises as to what is the least costly way of achieving that standard. One way is to prescribe a technology that each company in an industry must use. This is sometimes referred to as "command-and-control" regulation. Command-and-control regulation has been criticized by economists because it does not leave businesses and individuals with much choice in how they achieve an environmental target. For example, a law may require that a power plant use a scrubber to reduce air pollution, regardless of whether another technology or group of technologies might be more effective in achieving the same level of air quality.

Economists have argued that many pollution problems can be addressed

more effectively through the introduction of economic incentives. The idea behind using economic incentives is to save resources while achieving a particular environmental goal. For example, in 1990, the Congress adopted an economic incentive approach for limiting acid rain that could save society as much as \$1 billion annually when compared to a conventional command-and-control approach that required the largest polluters to install scrubbers.

There are many different kinds of economic incentive approaches. They include the use of subsidies, taxes, deposit-refund schemes, marketable permits, and the removal of institutional barriers that lead to price distortions. In the interest of brevity, I would like to focus on charges (taxes) and marketable permits.

Charge systems impose a fee or tax on pollution. For example, a chemical manufacturer would be charged for every unit of pollutant that it discharged into a river. Several European nations, including France, the Netherlands, and West Germany currently use water pollution charge systems.

Pollution charges, by themselves, do not restrict the amount of pollutants that may be emitted; rather, they tax emissions. Such fees ensure that a firm will internalize the previously external pollution costs and be forced to perform a profit and loss calculation in order to respond efficiently to the fee. A firm has many options. It might decide that it is in its interest to pay the fee, completely eliminate the discharge, or partially reduce the emission.

The advantage of the fee system is that all businesses face the same incentive to limit pollution at the margin. A firm will control pollution up to the point where the marginal cost of control just equals the fee. The result is that the total costs of pollution control are minimized, when compared with other methods of allocating the pollution control burden across businesses. Pollution charges, like other market-based mechanisms, also provide ongoing incentives for businesses to develop and adopt newer, better pollution control technologies.

One problem with emission charge systems is that governments do not know in advance what level of cleanup will result from any given charge. This problem stems from a lack of knowledge about how businesses will respond to a given level of taxation. Governments do not have the information to determine either an individual firm's pollution control costs or the distribution of costs across businesses. This inability to specify a target level of pollution that will be achieved does not, however, alter the reality that charges have the potential to achieve emission reductions at substantially lower cost than command-and-control regulation.

Marketable Permit Systems

Marketable or tradeable permits can achieve the same cost-minimizing allocation of the pollution control burden as a charge scheme, while also avoiding the problem of uncertain responses by businesses. Under a tradeable permit system, the allowable overall level of pollution is established and then allotted to businesses and government entities in the form of permits. A business that keeps its emission levels below the allotted level may sell or lease its surplus permits to others.

As with a charge system, the marginal cost of control is identical across businesses and thus the total cost of control is minimized for any given level of total pollution control. In the case of local water pollution control, for example, this approach could be substantially more efficient than current regulatory methods, both because its inherent flexibility takes advantage of differences in control costs, and because it allows individual businesses to decide where and how to make desired reductions in loadings.

In the event that overall loading targets are viewed as too strict, the government may choose to increase the supply of permits. Likewise, in order to reduce allowable emissions, regulators could take the opposite stance and reduce the supply of permits.

Permit systems have been used primarily in the United States. Examples include: the Environmental Protection Agency's Emissions Trading Program for air; the nationwide lead phasedown in gasoline, which allowed fuel refiners to trade reductions in lead content; and the gradual phase out of chlorofluorocarbons in the U.S., where businesses are allowed to trade the right to produce or import limited quantities of these chemicals. In addition, several western states have implemented water quantity trading in limited forms. Some states also are considering water environmental credit trading programs to achieve least-cost approaches for controlling discharges from farms and municipal wastewater treatment plants.

4. Encouraging the Use of Economic Instruments for Better Water Management

Congress could encourage EPA to implement both fee systems and marketable permit approaches. Because I believe fees are likely to encounter more political resistance, I believe Congress should promote more widespread use of marketable permits for improving water resource management.

The subsequent recommendations highlight the potential for encouraging greater use of marketable permits.

Recommendation 3: EPA should be required to implement marketable permits as the tool of choice for improving water quality, or justify in writing why it has not chosen this alternative.

The point of this recommendation is to encourage EPA to rely more heavily on market-based approaches for improving water quality rather than the command-and-control approach used for the last twenty years.

Recommendation 4: Congress should encourage EPA and the states to implement trading of environmental credits between point sources where technology-based requirements do not lead to the attainment of water quality goals (i.e., in "water quality limited" areas).

Recommendation 5: Congress should encourage EPA to allow for trading between dischargers whose effluent is then treated at a sewage treatment plant.

The point to point source trading between sources, such as municipal treatment plants and industrial sources, has the potential to save money and stimulate environmental innovation. So, too, does trading between dischargers whose effluent is treated at sewage treatment plants.

Recommendation 6: Congress should encourage trading with non-point sources, including trading between point and non-point sources and trading among non-point sources.

It is becoming increasingly apparent that many problems with water quality arise because non-point sources, such as agricultural runoff, are typically unregulated or minimally regulated. For example, over 18,000 water bodies will not attain water standards even if all point sources were to meet their technical requirements. While EPA has acknowledged non-point sources are a major problem, there have been few advances in regulation over the last twenty years.

There appears to be a great potential for achieving cost savings if non-point sources can be brought into the system. One way to bring them into the system is for EPA to develop guidelines for trading with non-point sources. Even if non-point sources remain largely unregulated, heavily regulated point sources should have the ability to trade with non-point sources provided they can show that water quality will improve as a result of the trade.

The technical challenges of regulating non-point sources are large, but surmountable. For example, I have proposed a transferable restoration credit system for the Everglades in South Florida that allows phosphorus to be measured at specified pump stations in the Everglades Agricultural Area. Where monitoring can only be done at great cost, then experts may need to use best practical judgment along with trading ratios to assure that water quality would improve. For example, in an application of this concept to the Hawkesbury-Nepean River system in Sydney, Australia, I am working with the government to establish trading rules for

phosphorus reductions for farmers. These reductions would reduce the occurrence of blue green algae blooms in the river system.

It is important to note that the technical challenges of regulating non-point sources are not unique to a market-based approach, but apply to all regulatory systems including command-and-control. If monitoring costs of actual loadings are too high, then other alternatives may be appropriate. For example, in the case of phosphorus use on farms, it may be preferable to impose a tax on inputs, such as fertilizer, basing the tax on expected harm to the water body.

A key advantage of introducing trading with non-point sources is that it provides environmental benefits while lowering the overall cost of regulation. If regulation of these sources remains largely voluntary, a market-based approach provides a positive incentive for these sources to participate in limiting their water pollution.

The concept of trading can be expanded to wetlands.

Recommendation 7: Congress should encourage EPA to develop and implement rules for trading among different kinds of wetlands.

The idea is to encourage the preservation of wetland functions while promoting economic growth. Because artificial wetlands can be constructed, there is scope for trading among wetlands. Establishing the rules for trading will be a challenge. EPA should be instructed to provide guidance on this issue in a timely manner, explicitly recognizing that different wetlands serve different functions. The practice of building or maintaining wetlands in exchange for specific forms of development has been tried successfully in Florida with the construction of Disney World. I propose to expand on that idea, allowing individuals greater flexibility in managing wetlands while preserving the environmental integrity of the wetland system.

Under current law, regulated entities would be required to meet technology-based requirements. This command-and-control regulation should be supplanted by market-oriented regulation that focuses on the environmental performance of the water body in question.

Recommendation 8: Congress should encourage EPA and the states to establish total maximum loads for all non-attainment water bodies.

Recommendation 9: For those areas where a load-based water quality standard is defined, Congress should permit the states to implement a trading system that does not require businesses to meet a specific technology-forcing requirement, provided that it can be shown that trading leads to a comparable or better outcome in terms of water quality.

The focus on environmental outcomes is likely to lead to better environmental quality at lower cost. Where there are damage thresholds associated with specific sites, some command-and-control regulation may be necessary to set the maximum ceilings on loads from a specific site or a cluster of sites. Nonetheless, the goal of regulation should be to provide the maximum improvement in environmental quality per dollar spent. This goal is best achieved through making greater use of market-based approaches for preserving and enhancing water quality.

While most, if not all, of the preceding recommendations could be implemented under the existing Clean Water Act, explicit Congressional support for marketable permits will spur their use.

Recommendation 10: Congress should insert language in the new Clean Water Act that demonstrates its commitment to the widespread use of marketable permits for improving the quality and economic value of the nation's water resources.

Congress should make it clear that it is primarily concerned with making necessary improvements in water quality in a timely manner. The precise method of achieving those environmental improvements should be left to business and government entities responsible for making the reductions needed to meet those goals.

5. Whither Water Regulation?

A fundamental concern for the 1990s will be integrating water quality and quantity concerns. My testimony has focused primarily on quality issues, but the two issues are inextricably linked. Just as quality can be improved through the introduction of markets, so, too, can water quantity. Moreover, markets for water quantity may also improve water quality by encouraging non-point sources of pollution to conserve water. While water quantity issues generally are subject to state law, the federal government could help by endorsing the use of water markets and allowing the transfer of water contracts for federal reclamation water supply projects.

We have the technical know-how to implement economic instruments for improved water quality and allocation. The question is whether we have the political will. I am optimistic that more markets for improving water management will be introduced. My only question is whether Washington will lead the charge or follow. The reauthorization of the Clean Water Act provides you with a unique opportunity to lead the charge. I hope you take advantage of this opportunity to benefit the health and welfare of the American people.

Thank you.

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**STATEMENT OF AMERICAN FARM BUREAU FEDERATION
TO THE HOUSE PUBLIC WORKS AND TRANSPORTATION SUBCOMMITTEE
ON WATER RESOURCES AND ENVIRONMENT
REGARDING CLEAN WATER ACT REAUTHORIZATION**

**Presented by Keith W. Eckel
President
Pennsylvania Farm Bureau
and
American Farm Bureau Federation Board Member**

April 22, 1993

Thank you Mr. Chairman. My name is Keith Eckel, and on behalf of the American Farm Bureau Federation we appreciate the opportunity to speak to you about the reauthorization of the Clean Water Act. Water quality is of great interest to Farm Bureau's nearly four million member families. Farm families have an inherent self interest in protecting water quality. Our families, our livestock and our crops and our land are usually the first to be affected by a degradation of water quality.

From the perspective of farmers and ranchers, there are three broad aspects to the Clean Water Act that need your attention. First, a non-point source program that retains the basic tenants of the current 319 program. Second, is the need for a clear, comprehensive wetland policy. And third, an adequate commitment of resources to make it work.

NONPOINT SOURCE

This issue has been a priority for farmers and ranchers for many years and there is a tremendous amount of activity on farms and ranches across the country. Farmers are reducing erosion and increasing efficiency of chemical use. For example:

- ◆ Soil erosion has been reduced 90 percent or more on 35.5 million acres of land that is in the Conservation Reserve Program,
- ◆ Crop protection chemicals used by farmers are down 20 percent from 1982, and
- ◆ Corn's nitrogen fertilizer use efficiency is up 14 percent since 1980.
- ◆ Implementation of conservation compliance plans on highly erodible soils is slightly ahead of the expected rate with 58 percent of planned acres fully implemented. (See attachment #1 and #2.)
- ◆ Over 88 million acres of cropland are under conservation tillage systems providing residue cover of 30 to 90 percent,
- ◆ An additional 73 million acres of cropland has 15 to 30 percent residue cover providing substantial erosion control benefits, particularly in small grain production areas of the great plains.

- ♦ "No-till" farming practices soybean acres quadrupled between 1989-1992 to 8.2 million acres.

"The assumption that American agriculture is incapable of far-reaching change is not true; the changes we have seen in tillage and pest control over the past 20 years would have been considered revolutionary in 1969." —Dr. R.G. Hoeft and E.D. Nafziger, University of Illinois

As an industry, we are more mindful of the potential for adverse impacts of our activities. The process of education and promoting awareness began many years ago. Attached is a summary of several of the environmental initiatives that American Farm Bureau Federation has had on-going over the last 10 years which support the effort to protect our water resources. (See attachment #3.)

As with many issues, perception and reality often tend to reach different conclusions. Despite the perceptions, all indications are that surface water quality is improving and the trend will more than likely continue in that direction for some time. Senator Chafee has noted that 80 percent of the nation's waters now meet the Clean Water Act's goal of being fishable and swimmable. That is something we ought to be shouting about! We are making great progress!

We believe, Mr. Chairman, that it is important for the general public to know that whatever water problems exist in rural America they are manageable problems. We are not in a

water quality crisis situation.

Agricultural chemicals are also often perceived as one of the "major threats" to water quality. However, the EPA National Pesticide Survey went looking for 126 pesticides and or breakdown products in rural drinking water wells and community wells and **DID NOT** find 110 of them. Those that were found were generally present at levels that were not threatening to human health.

Our members have been testing their own wells in record numbers through cooperative programs developed by Farm Bureau. More than 40,000 wells in 19 states have been tested for nitrate. More than eighty percent of the tests showed nitrate levels in the range of what is normally considered naturally occurring background levels.

Mr. Chairman, modern agricultural technology should not be viewed as the problem, but rather the solution. The amount of cultivated land in the United States is approximately 340 million acres. That is approximately the same amount of land in production at the turn of the century. However, the U.S. population (consumers) has increased by 179 million people, while the number of farmers has steadily declined. Farmers account for less than one percent of population today. Despite these trends we have not only been able to meet the rising domestic demand for food consumption, but we are exporting approximately 30 percent of our production abroad. Furthermore, we are today idling more land to conservation than ever before and employing better conservation on the land we crop. If it were not for the advances in technology, our domestic demand for food could require as much as 800 million acres of additional cropland. It is **because of technology** such as pesticides and fertilizers and increased efficiencies produced through agricultural research, that land is **now available** for conservation set asides, wetland restoration, wildlife habitat, forest restoration, parks and

wilderness areas. And, similarly, 99 percent of the population is free to pursue occupations other than self-sustenance. Today we have more woodlands, more wildlife, more conservation, than at anytime in over a century. That has had and will continue to have a benefit to water quality.

When setting policy, it is important to look at the long-term trends and avoid decisions based on historical snapshots. In the state of Iowa for example, the use of commercial fertilizers have been blamed for elevated levels of nitrate in the Des Moines River. Ironically however, the Leopold Center for Sustainable Agriculture at Iowa State University has recently issued a report that calls this into question. Their research found that nearly 50 years ago, before commercial nitrogen fertilizers began to be used extensively, the nitrate level in the river was already nearly the same as it is today. It is important that we understand the nature of the problem in order to effect the right solution.



As this Committee prepares to reauthorize the Clean Water Act provisions addressing nonpoint source runoff, I would like to offer several observations that come from our experiences in working with landowners on water quality issues.

1. Farmers and ranchers want to do what is right for the environment. They will respond to problems when provided with sound, scientifically based information and reliable cost-effective solutions.

2. Our public policies affecting water quality should be based on fact, not perception. There is a critical need for continued research and a greater understanding of the site-specific linkages between farm practices and water quality. We ought to have the facts to support policy. The cost of being wrong is simple too great. Sound policy must be based on more than grab samples and generalizations.

3. We believe the programs and solutions that work best are those that come from the grass-roots up. Achieving improved water quality practices is best accomplished by voluntary, locally designed and implemented site-specific solutions. We should avoid the temptation to adopt "one-size-fits-all solutions". In looking at the successes of USDA's Rural Clean Water Program, it was clear that the more local people took control of the effort, the better the results.

It is equally important to realize that these practices must be put into use before any benefit is to be achieved. Therefore, we need a sound, trusted and reliable delivery system of information, technology, and assistance to the farm-gate. The concept of State primacy in Sec. 319 should be maintained.

"We must realize that we cannot turn the clock back to the good old days of the 1930's when the world population stood at 2 billion people and few agricultural chemicals were used. Given current scientific knowledge, it is my belief that the judicious use of agricultural—especially chemical fertilizers—is absolutely essential to produce food needed to feed today's population of 5.3 billion, which is currently increasing at the rate of 88 million per year."
—Dr. Norman Borlaug, Nobel Laureate

4. As I mentioned above, achieving water quality improvements is a process that takes time to show results. We should take a reasoned, long-term approach to water quality improvement and avoid the temptation to make decisions based on historical snapshots.

An assessment from Dr. George Halberg, of the Iowa Department of Natural Resources who has spent a decade on the widely known Big Spring water quality improvement project in northeast Iowa sums up the situation.

“We need time. Even if we could do it—implement all known BMP’s today—we’d still be a decade away from proving changes in water quality. —Dr. George Halberg, Iowa Department of Natural Resources”

5. There is an urgent need to consolidate efforts. One of the major problems facing farmers today is the multitude of duplicate programs. We have, as a base, the voluntary Agricultural Conservation Program (ACP) and general conservation technical assistance. For farmers who voluntarily wish to receive USDA program benefits there’s the Food Security Act’s mandatory conservation compliance, sodbuster and swampbuster programs. There is the voluntary Conservation Reserve Program, the Water Quality Incentive Program, the Clean Water Act Sec. 319 programs developed by many states, and there are the regional Gulf of Mexico, Chesapeake Bay, Great Lakes and Great Plains programs. In addition, farmers in many of areas will soon be responding to the Coastal Zone Act Reauthorization Amendments as their state begins implementation. We’ve had the Rural Clean Water Program, the Hydrologic Unit Area Projects Demonstration Program and many others.

Each of these can have a positive impact on water quality, but it makes no sense for a landowner to have to deal with the paperwork for what could be eight or more separate programs. And this is just the short list. Many are conflicting and redundant, virtually none are coordinated.

Representative English has introduced legislation that would enable farmers establish to a single conservation plan for their farms and ranches. The concept makes sense but should be expanded to apply to programs from EPA and other agencies as well. We urge that this Committee look carefully at what is already required and find ways to combine and consolidate efforts.

With regard to specific suggestions regarding the Sec. 319 program, Farm Bureau and other farm and ranch organizations have developed the attached Statement of Principles. We have met with Committee staff and look forward to working with you on this matter. (See attachment #4.)

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In summary, we support the following concepts to address the issue of nonpoint source pollution:

- ✓ The central focus of NPS management solutions should be a reasonable and voluntary approach based on incentives, education, and site specific technical assistance. The nature of the problem differs substantially from that of point source pollution and hence requires different approaches. Best management plans and practices should allow maximum flexibility.
- ✓ NPS programs should retain the emphasis on State primacy and the development of locally designed, implemented and monitored best management practices.
- ✓ States should continue to have the authority to identify and resolve their priority water quality problems through administration of Sec. 319 funds.
- ✓ Management efforts funded by Sec. 319 money should be directed to priority watershed areas based on scientific assessments. Strategies should be developed on a watershed-wide basis.
- ✓ USDA and the Soil Conservation Service should have the primary role in developing plans and assisting landowners with implementation.
- ✓ Reauthorization of the Clean Water Act should include a strong financial commitment to further research, monitoring and assessment projects. More information is needed on the source, extent and impact of nonpoint source runoff, as well as the effectiveness, utility and economic feasibility of conservation practices.
- ✓ It is inappropriate for the Clean Water Act to extend citizens suit provisions to individuals participating in NPS management programs, nor is it appropriate to extend authority for citizen monitoring and oversight.

Our farmer and rancher members and other mainstream people realize that neither they, nor the nation, can afford the goals of zero pollution and zero risk when it comes to controlling soil erosion and agricultural runoff or any other human activity. However, they are willing to pursue excellence in conservation.

WETLAND POLICY REFORM

HISTORICAL PERSPECTIVE

For much of our history, wetlands have been viewed as a problem to be eliminated, rather than a resource to be managed and conserved. Wetlands were altered for purposes that provided many benefits to society, including flood control, protection of public health, agricultural production, road construction, government, education, and residential development.

Only recently has the emphasis shifted with a new focus on the unique and valuable functions of some wetlands in their natural state. This shift in public policy, and the view by some that wetlands are a "public" resource, does not always mesh with the fact that about 70 percent of wetlands are on private land, which individuals have purchased, mortgaged, and pay property taxes on. From an agricultural standpoint, one of the major shortcomings of the current wetland regulatory system is the failure to recognize and respect private property rights. Additional dry land and uplands have been swept into wetland categories by bureaucratic expansion.

A major part of the problem is that we have a wetlands program that grew not by design but by default, by bureaucratic expansion rather than congressional intent. In fact, the Clean Water Act does not even clearly and expressly direct the regulation of wetlands. Wetlands are not defined as "waters of the United States." Farmers and other natural resource users are now at the mercy of four federal agencies engaged in territory battles. Each has its own ideas about wetlands. None of them really cares what their decisions do to the livelihoods of landowners.

In less than 20 years, we have seen the Section 404 program go from regulating navigable waters, to regulating corn and soybean fields. Regulatory authority has expanded from restricting a few activities in the public waters of the United States, to federal planning and control without compensation. We have a regulatory policy that forsakes all other elements of ecosystems for wetlands. It rules blindly without weighing the importance of the wetland or the proposed project, the environmental value of the alternative site impacted, or for that matter, the cost to the property owners and the taxpayers. It is a policy that has required highway engineers to cut down, excavate and flood a mature maritime forest in Savannah, Georgia, in order to "compensate" for the minor wetlands lost during road-widening. It is a policy that for years has stifled local government officials in southeastern Virginia, where 80 percent of the land is hydric soils, from building a new drinking water reservoir for their residents. It is a policy that may cause a farmer to forfeit a third of his farm as "mitigation" because he could not afford the protracted legal costs of challenging the Corps of Engineers' allegation that his prior-converted cropland was still a wetland.

"Outside of Alaska, the majority-65 million acres of the nations wetlands are owned by the private sector--individual farmers, ranchers, corporations, land trusts, and other private landowners."
—National Wetlands Policy Forum

"The United States urgently needs a better system for protecting and managing its wetlands." —The National Wetlands Policy Forum

Over the last several years, this Committee has had numerous hearings on wetland policy. Witnesses have included farmers, businessmen, bankers, local government officials, concerned citizens, realtors, transportation personnel, members of Congress and even former regulators at the U.S. Army Corps of Engineers. Their message contained a singularly

consistent refrain: Something is terribly wrong with wetland regulations. The regulators have overreached, the regulations have no design or coordination, and there is a lack balance and perspective with other policy goals. This concern is real and widespread.

This Committee must not let the opportunity pass to improve wetland policy, from both the standpoint of the resource and the landowners.

WETLAND INVENTORY

There has been much attention given to the loss of wetlands over the years and the importance of conserving wetlands. Central to this debate is the need to understand the current rate of conversion of wetlands, as well as where and why those conversions are occurring.

Recently, the U.S. Department of Agriculture updated its National Resource Inventory (NRI) which covers the years 1982-1991. It represents the most recent survey of our wetland inventory and offers the most up-to-date picture of the wetlands alteration. The inventory examined the conversion of wetlands on non-federal rural land in the United States, excluding Alaska.

The NRI shows that the total wetland losses between 1982 and 1991 have trended down to approximately 110 thousand acres annually on non-federal rural lands. This includes alterations from agriculture, development and other categories such as drought, change to open water and acquisition by the federal government. Keep in mind that there are no new large-scale farmland clearing projects currently under way. The last large scale farmland clearings occurred when government inflation policy ran commodity prices to very high levels.

Of particular importance is the clear downward trend of these alterations. The alterations attributed to agriculture are particularly worth noting. They have declined to an average of less than 30,000 acres per year. Furthermore, the inventory does not attempt to estimate the amount of wetland acres created or restored by farmers and ranchers which we believe is significant. Nor would this account for the millions of acres of cropland which has fallen out of production over the last decade.

We believe agriculture already is contributing to sizeable additions to our nation's inventory of wetlands. We strongly recommend that the federal government adopt a standard method for inventorying wetlands, conduct a national inventory, classify these wetlands on the basis of function and value, and require that all government agencies adhere to this single inventory. We also suggest that before any federal inventory of wetlands is conducted, the Congress should adopt a clear, consistent and common-sense definition of wetlands to minimize confusion.

WETLAND DELINEATION MANUAL

For years, Farm Bureau has argued that there must be a common-sense definition of wetlands. Wetland delineation has been a major part of the problem, in large part because currently, wetland delineation equals wetland jurisdiction. Hence, by expanding the scope of wetland delineation as was the case in the 1989 manual, jurisdiction was also

expanded—without any public review or input, or any attempt to gauge the added regulatory impact on landowners, small business, property values, bank portfolios or local governments.

The fact that the National Academy of Sciences (NAS) is currently reviewing the several of the scientific aspects of wetland delineation should not preclude this Committee from addressing the policy reforms that are needed. The fundamental question is not the lack of science, but how to apply the science we have in a rational manner.

There has been abundant science incorporated in the 1987, 1989 and the 1991 draft version of the wetland manual. The controversy stems from the inescapable fact that under current law, everything that is deemed to have any wetland characteristics is subject to regulation, regardless of its functional value. Once regulated, there is no provision in law to classify high or low value wet soils and apportion protection efforts accordingly. Consequently, the coastal marsh, bogs, swamps and the damp area in the center of a corn field are both subject to jurisdiction. Similarly, the lack of any appeals procedure, increased regulation of landclearing activities, and a strengthening of the Sec. 404(f) provisions regarding normal farming activities all need to be addressed.

These specific concerns, as well as the overriding issue of what land ought to be regulated, are all outside of the scope of the National Academy of Sciences study. Any resolution of these problems will only come from the Congress and originate within the Public Works Committee. Reform of Sec. 404 must be part of the reauthorization of the Clean Water Act in 1993.

IMPACT ON AGRICULTURE

Farmers and ranchers, like many other small businesses, have been significantly impacted by the current wetland regulatory program. Many farmers have unwittingly found themselves ensnared in a regulatory trap that unnecessarily delays and frustrates all attempts at good-faith compliance and is prohibitively costly to challenge over a protracted period of time. In farming or ranching, the agricultural value of the land rarely justifies the cost of regulatory burdens, which can run into hundreds of thousands of dollars and many years. As a result, win or lose, the viability of the farming or ranching operation is placed in jeopardy. Wetland regulations have the net effect of reducing the value of productive assets by restricting current economic uses and limiting future use opportunities. The incidents are frequent, and costly and underscore the need for major reform.

From the perspective of farmers and ranchers, most of the problem stems from an excessively broad federal definition that encompasses land exhibiting few if any true wetland characteristics. Attempts to regulate so-called "dry wetlands" as they are known to environmental advocates, has led to many landowners, government officials, small businessmen and others becoming embroiled in costly conflict.

Regulation of these lands has caused property values to fall and tax burdens to shift dramatically, limiting the ability to obtain critical financing for farming operations. Dry wetlands designations also have precluded farmers and ranchers from physically expanding many types of farming operations, causing inefficiency and reduced competitiveness.

Despite a clear statement of intent from Congress in Section 404(f) that normal and routine farming and ranching practices are not subject to individual permit requirements, the opposite is often the case. Regulators who are anxious to expand their control and power over private landowners frequently cite normal and routine farming practices as needing a Section 404 permit. Such activities could be as innocuous as extending a milking parlor into a dry pasture, cleaning overgrown fence and hedgerows, cleaning and maintaining drainage ditches, construction of farm and stock ponds, maintaining center-pivot irrigation systems, building rice levees and catfish ponds, maintenance of levees, or brush clearing.

These are just a few of the types of normal and routine farming activities that our members have reported being cited by federal regulators as requiring federal permits. These frequent attempts to circumvent and narrow the intent of Congress under Sec. 404(f) actions are not benign and can result in costly legal disputes. Often, landowners are given an "opportunity for settlement" that usually includes a severe financial penalty and forfeiture of some land as mitigation over the so-called violation. In short, the issue comes down to vague law, and unintelligible regulations that have eroded credibility of the 404 program among landowners who are law-abiding people.

Land often is the farmer's only tangible asset after a lifetime of work. It represents his retirement, children's education, source of credit and overall financial well-being. To deny a landowner reasonable and full use of his property is wrong.

Clearly, we can and should do better. The challenge is to construct a coherent, national policy that protects the rights of property owners. Good policy is policy that the average citizen understands what we as a self-governing people are trying to accomplish. Today, not one citizen can tell you what we are trying to do with wetlands policy. It simply makes no economic or political sense at all.

While we have attempted to briefly illustrate the impact of that program on farmers and ranchers, we offer the following suggestions for correcting the problem. Those most pertinent to agriculture include the following:

1. Wetland Definitions

The temporary return to the 1987 Wetland manual is an improvement over the 1989 manual, but it too contains some of the uncertainties that led to the original controversy. The conflict over wetland delineation stems from the lack of a clear public policy to apply good science. In that context we look forward to the product of the National Academy of Sciences, but we do not view the NAS study as a panacea. As members of the House of Representatives, you, not the NAS, must be the arbiter of that conflict, the source of the compromise. Eighteen more months of study will not resolve it.

2. Prior Converted Cropland

The Environmental Protection Agency and Corps of Engineers has promulgated rules to exclude prior converted cropland from the scope of Section 404. This was an important change and we commend the Corps for their action. Prior converted croplands are defined as lands brought into agricultural production before December 23, 1985 (enactment date of the

Swampbuster provisions of the 1985 Food Security Act). They are lands that have been physically altered such as ditched, tilled, leveled or drained for the purpose of food production. They no longer function as wetlands, nor as the Corps indicated in a regulatory guidance letter of September 26, 1990, do they "show important wetland values." The 1985 farm bill specifically excludes prior converted cropland, and we believe that a similar exclusion should be carried through in Section 404.

3. Normal Farming Practices

Section 404(f) of the Clean Water Act intended for farms, ranches and forestry operations to continue "normal" farming and ranching activities including, but not limited to plowing, seeding, cultivating, minor drainage, harvesting etc., without having to obtain individual permits. Despite that intent, many of the conflicts between farmers and regulators are due to attempts by field office regulators with no familiarity with agriculture to define what constitutes a normal farming practice.

In Louisiana, Arkansas and Missouri, for example, regulators attempted to restrict the construction of rice levees as practices that were not exempt under Section 404(f) and that a 404 permit would be required, along with the need for mitigation. It should be noted that this land is dry and has been in crop production and crop rotations for decades. To grow rice, the water had to be diverted onto the land. Nevertheless, it took the personal intervention of five U.S. Senators and several months of effort to convince the Corps of Engineers of its error. Imagine, all of those resources spent to prove that this one activity involving only one commodity in one part of the country was a routine one. You can begin to understand why an individual farmer feels totally helpless and intimidated by this process.

Similar problems have occurred over the construction of catfish ponds, haying and grazing high mountain meadows, maintenance of drainage ditches, and many other routine practices.

We believe the intent of Congress is clear that these activities are to be exempt from permit requirements. Because of the diversity of agriculture among commodities and regions of the country, Congress should restate and further clarify that intent.

4. Classification of Wetlands

Changes to Section 404 should include a system of classifying wetlands, recognizing that not all wetlands share the same ecological value or perform the same functions. Those that are truly unique may be deserving of greater protection, whereas those that are marginal or only technically meet wetlands criteria should be subject to less stringent oversight.

5. Private Property Rights

Central to the wetlands issue is the question of private property rights. More than 70 percent of wetlands are on private property. The 5th Amendment to our Constitution provides that private property may not be taken for public use without payment or just compensation. Historically, the landowner has borne the burden of protecting this resource, both in the form of direct cost, as well as restricted use of property. We suggest that there is a public obligation to help shoulder these costs, since the public at large is the beneficiary.

6. Exclusion of Man-Made Wetlands

Many wetlands are created, intentionally or unintentionally, as a result of man's activities. Wetland vegetation as a result of crop irrigation, saturation from broken drain tiles, flooding as a result of neglected stream maintenance, standing water from poorly designed public works projects, and the construction of farm and stock ponds are examples.

These artificially created wetlands should not fall under 404 jurisdiction because they are man-made and often unintentional. Landowners should be encouraged to create wetland areas and the prospect of regulatory entanglement is not an incentive to that objective.

7. Soil Conservation Service Role

The USDA Soil Conservation Service should have a consolidated role in delineating wetlands on agricultural land. Currently they are responsible for delineating and enforcing the Swampbuster program. We strongly recommend that authority for delineation of all wetlands on agricultural land be the sole responsibility of the Soil Conservation Service. It would provide much needed consistency greatly reduce the conflict.

8. Compatible Wetland Crops

Under certain circumstances, some types of agricultural production are entirely compatible with conserving wetland functions and values. Forestry, cranberry production, haying/grazing and some types of aquaculture are prime examples. Where such commodities can be produced in manner consistent with overall wetland functions, they should be encouraged and allowed to expand.

9. Establish Appeals Process/Consolidate Enforcement

Another serious problem with the 404 program is the lack of any appeals process. There must be an equitable, efficient and inexpensive means for average landowners to appeal a delineation or a decision without going to court. Similarly, the dual enforcement of Sec. 404 by the Corps of Engineers and the Environmental Protection Agency needs to be consolidated.

We believe that the suggestions contained above will greatly improve the wetland regulatory program and reduce many of the inequities and difficulties faced by landowners and small businessmen. Many of these concepts are embodied in legislation currently introduced in the House of Representatives, H.R. 1330. We urge your support of this legislation.

“The National Wetlands Policy Forum strongly endorses the increased and coordinated use of compatible economic uses and other economic incentives to encourage landowners to manage, protect, restore and enhance the wetlands resources that they own.”
—The National Wetlands Policy Forum

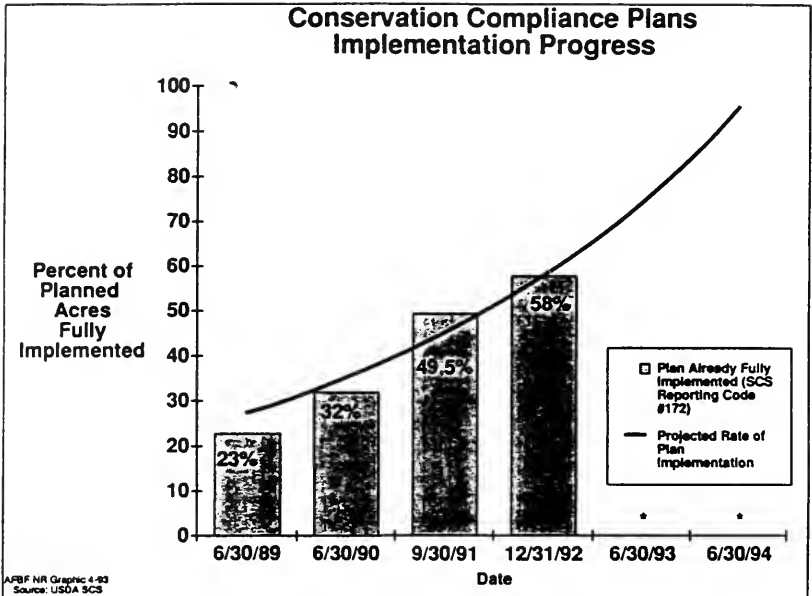
Clean Water Act Funding Is Essential

The success of the efforts to address point source pollution is largely a result of the right tools coupled with the necessary resources to make it succeed. It is estimated that the total amount spent by the public and private sector to reduce point source pollution has cost more than \$160 billion over the last 20 years.

In our opinion, a similar and sustained commitment needs to be made if nonpoint source pollution is the priority that the Congress and the EPA say it is. While the diffuse nature of the problem requires a different policy approach, a commitment of financial resources and time are critical. Success will not occur without, in the case of agriculture, a cooperative approach that emphasizes technical assistance, grants and cost-sharing to the farm gate. It is a site-specific problem that requires site-specific solutions. All of the program building notwithstanding, nothing is gained in the form of improved water quality until something occurs on the ground. In some instances best management practices are simply too costly and represent an economic impediment to the landowner. Many small communities and small businesses faced the same kind of economic dilemma in coping with the point source requirements. As such, it will necessitate the same effort at developing creative and cooperative solutions.

One approach that we would strongly disagree with is a proposed tax on agricultural inputs. There is tremendous cost pressure on agriculture already to reduce the use and maximize the efficiency of agricultural production inputs. Little added benefit would be added by a so-called "green tax" on pesticides and nutrients. Conversely, the agricultural community is already financially strapped and it makes little sense to place further economic burdens on them that would further impede their ability to implement conservation practices.

We would encourage and assist any constructive and cooperative efforts to resolve the question of financing nonpoint source programs. The concept of extending the revolving loan fund or a version thereof, grants to local units of government, direct grants and/or cost-sharing, conservation credits on property or income taxes and market based approaches such as the trading concept all need to be thoroughly examined and considered. We look forward to working with you in this effort.



NATIONAL SUMMARY

MAJOR FSA PLANNED ENGINEERING PRACTICES

<u>PRACTICE</u>	<u>AMOUNT</u>	<u>STAFF YEARS</u>
Terraces	216,000 miles	3124
Grassed Waterway	1.3 million acres	2684
Structures	45,751 (No.)	592
Sediment Basins	90,724 (No.)	616
Diversalons	4750 miles	308
Other	-----	2095
TOTAL		9318

MAJOR FSA PLANNED AGRONOMIC PRACTICES

<u>PRACTICE</u>	<u>AMOUNT</u>	<u>STAFF YEARS</u>
Conservation Tillage	45.5 million acres	1884
Cropping System	85.2 million acres	1774
Crop Residue	65.0 million acres	1602
Contouring	25.8 million acres	1039
Critical Area	552,000 acres	543
Field Strips	2.0 million acres	504
Contour Strips	3.3 million acres	310
Other	-----	1456
TOTAL		9112

TOTAL Engineering Practices	9318
TOTAL Agronomic Practices	9112
TOTAL	<u>18430</u>

AFBF's ENVIRONMENTAL EDUCATIONAL PROGRAMS

- 1983 Conservation Tillage Action Plan**
- 1984 Farm Partners: Have You Hugged Your Soil Lately?**
Includes Leader's Guide, 10 page workbook, & slide/tape show for a 1/2-day workshop on soil compaction, and residue cover.
- 1987 Water Quality Self-Help Checklist**
Now in its 7th edition with over 600,000 copies printed.
- 1988 Farmer Idea Exchange**
20 top ideas showcased every year at annual meeting, many relate to soil conservation, and more efficient use of fertilizer and crop protection chemicals.
- 1989 LISA Tours in IL, IN and OH-** (led by state Farm Bureaus)
- 1989 Cooperative Well Water Testing Program**
23 state FB's involved, over 40,000 wells tested, video tape available describing program.
- 1990 Cooperative Conservation Tillage Transect Survey** for use by county Farm Bureaus
- 1990 WQ- FB's Computerized Water Quality Self-Help Checklist**
- 1990 FB's Professional Self-Help Education Series**
Part I Agricultural Technology- 25 page booklet.
Part II Chemical Use- 26 page booklet.
Part III IPM- 33 page booklet.
- 1991 Crop Residue Placemats**
2800 camera ready slides distributed to state FBs-(one for each county FB.)
- 1991 Pesticide Recordkeeping Booklet**
ND, NB & KS Developed their own- AFBF distributed another 4,000 copies as a test.
- 1992 Innovation and Technology Transfer: What County Farm Bureaus Can Do**
Distributed 600 copies of this 80-page booklet outlining innovative conservation equipment, county programs and state laws to encourage its use, and public education programs that county FBs could use.
- 1992 RCWP Lessons Learned, Nonpoint Source Water Quality Project Checklist.**
Distributed over 2,000 copies of this 6-page white paper and checklist to key federal, state, and local water quality officials and legislators. The paper was coigned by AFBF, all state Farm Bureaus and 27 other major agriculturally related organizations.

For Further Information Contact: American Farm Bureau Federation
Natural Resources Division
225 Touhy Ave., Park Ridge, IL 60068.

PRINCIPLES STATEMENT OF THE CLEAN WATER ACT WORKING GROUP

American Farm Bureau Federation
American Feed Industry Association
American Forest and Paper Association
American Nurserymen
American Sheep Industry Association
American Soybean Association
The Fertilizer Institute
National Agricultural Chemicals Association
National Association of Conservation Districts
National Association of State Departments of Agriculture
National Association of Wheat Growers
National Broiler Council
National Cattlemen's Association
National Corn Growers Association
National Cotton Council
National Council of Farmer Cooperatives
National Farmers Union
National Milk Producers Federation
National Pork Producers Council
National Turkey Federation
National Water Resources Association
U.S. Rice Producers

CLEAN WATER ACT REAUTHORIZATION: NONPOINT SOURCE PROVISIONS

In the reauthorization of the Clean Water Act, Congress should adhere to the following principles:

1. The Clean Water Act (CWA) does not stand alone in protecting America's waters from nonpoint source (NPS) pollution. Other ongoing programs at the federal, state and local level must be funded fully, coordinated with and not superceded by the CWA. This includes, in particular, the soil conservation and water quality provisions of the 1985 and 1990 farm acts and the state groundwater and surface water protection programs of the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).
2. Recognizing the 20-year commitment our country has had to eliminating point-source pollution, success in reducing the more complex and diverse NPS pollution will require similar time and resource commitments. However, management of this problem will require a different approach than that of point source pollution elimination because, unlike point source pollution, NPS pollution is primarily a weather-related phenomenon that can be managed, but not feasibly eliminated. NPS pollution is caused by the inadvertent discharge of pollutants from a wide variety of society's most essential activities.
3. The central focus of NPS management solutions should be a reasonable and voluntary approach based on incentives, education and technical assistance as the primary means of managing NPS pollution.
 - NPS pollution management programs should (a) emphasize the protection of water resources and state-designated water uses, including state-designated agricultural uses, and (b) recognize the importance and needs of individual agricultural producers and other landowners affected by the CWA.
 - This approach emphasizes the use of locally designed and applied, economically feasible, site-specific best management practices which do not infringe on private property rights. Implementation of these farm management options over a realistic time frame will further the goal of reaching or maintaining designated uses of water bodies.
 - It is inappropriate to link USDA commodity, conservation or disaster program payments to the success or failure of management programs for NPS pollution authorized under the CWA.

4. Current CWA language contains valuable provisions for NPS management embodied in Section 319. Although this NPS section has been historically underfunded and has been hampered by bureaucratic roadblocks, all states now have approved Section 319 assessments and approved management programs. Within the CWA, it is the preferable vehicle for management of NPS pollution, and changes which occur during CWA reauthorization should reinforce these existing NPS provisions.
 - The proper management of NPS pollution lies in state and local efforts. As such, states should continue to identify and resolve their priority NPS water problems through administration of Section 319 funds. With state oversight and approval, local organizations should continue to carry out these NPS programs. Agencies at the federal and state levels should harmonize objectives and coordinate funding for national and regional NPS management programs.
 - State and local programs should provide for a mix of research, development, education and technical and financial assistance for both planning and implementing actions aimed at achieving state designated uses.
5. Management efforts funded by Section 319 of the CWA should be directed to priority areas based on scientific assessments that identify water bodies with impaired or threatened uses.
 - Priority, as determined by states, should be based on the magnitude of risk to human health, the protection of designated uses, and likelihood of further significant and unreasonable water quality degradation if no action is taken.
 - Strategies should be developed on a hydrologic unit, watershed-wide basis using an approach that includes the consideration of both surface and ground water quality.
 - Programs should focus on cost-effective, site-specific practices for individual operations with flexibility for implementation.
 - In order for Section 319 to work effectively for agriculture, USDA must play a lead role in the delivery of education and technical assistance at the state and local level.

6. An effective and cost-efficient response to water quality problems requires accurate and reliable information on (a) the source, extent, and impact of NPS pollution, as well as (b) the effectiveness, utility and economic feasibility of conservation measures and best management practices.
 - Any Clean Water Act reauthorization should include a strong financial commitment to further research, monitoring and assessment projects.
 - Monitoring should include before and after sampling as well as frequent sampling during storm events and assessment of natural and historic loadings.
 - Scientific research and monitoring projects should follow protocols developed by the U.S. Geological Service and should be conducted on a watershed basis with local and state input.
 - Representative pilot projects aimed at achieving market based incentives on a watershed or regional level should be encouraged.
7. The Clean Water Act Reauthorization should not directly or indirectly create a federal water quality law or program which supersedes, abrogates or impairs state water allocation systems and water rights.
8. Section 319 management programs on federal lands should be developed and implemented by the specific agency statutorily charged with management of the lands in question, rather than by regulatory authorities independent of that agency.
9. It is inappropriate for a reauthorization of the Clean Water Act to provide the authority for citizens suits against individuals participating in NPS management programs.



STATEMENT FOR THE RECORD
OF BETH NORCROSS
DIRECTOR OF LEGISLATIVE PROGRAMS
AMERICAN RIVERS, INC.

ON S. 1114
THE WATER POLLUTION PREVENTION
AND CONTROL ACT OF 1993

BEFORE THE SENATE ENVIRONMENT
AND PUBLIC WORKS COMMITTEE

SEPTEMBER 30, 1993

American Rivers appreciates the opportunity to provide testimony on S. 1114, the Water Pollution Prevention and Control Act of 1993. American Rivers is a 15,000-member conservation organization dedicated to the protection and restoration of our nation's rivers and streams.

We would like to begin by commending Senators Baucus and Chafee for the introduction of this far-reaching re-authorization of the Clean Water Act. While we do have some concerns with the bill as currently drafted, it goes a long way in addressing many of the major issues affecting the health of the country's waterways.

Our testimony will center around our belief that the Clean Water Act must recognize the most basic tenet of river science - a river system is an integrated whole with its health dependent on all aspects of its associated ecosystem. To meet its goal of protecting the "chemical, physical, and biological integrity of the Nation's waters" (emphasis added), the Act must address not only the chemical composition of the river system, but also the vitality of its headwaters and tributaries, its nearside riparian habitat, its channel structure, its flow regime, and the aquatic species composition associated with it.

While the chemical health of the nation's waterways has shown great progress since the passage of the Clean Water Act in 1972, unfortunately the biological health of our rivers and streams has declined precipitously. In the National Research Council's National Academy of Sciences' far-reaching report, *Restoration of Aquatic Ecosystems: Science, Technology, and Public Policy*, the authors point out that aquatic species are declining at a rate far greater than that of terrestrial species. Still other studies come to similarly bleak conclusions. Specifically:

- Riparian forests have been reduced by 66 percent. In Arizona, low-lying riparian habitat is merely 10% of its historic level.
- Thirty-four percent of North American fish species, 65% of crayfishes, and 75% percent of unionid mussels are classified as rare to extinct.
- Twenty percent of the native fishes of the Western United States are extinct or endangered.

- Since 1933, 20 percent of the mollusks (clams and their relatives) in the Tennessee River system have been lost, and 45 percent of the remaining species are endangered or seriously depleted.
- Since 1910, salmon runs on the Columbia River have declined by 75 to 85 percent. Over 200 wild Pacific salmon and steelhead stocks are currently at risk of extinction.

While the traditional emphasis on chemical criteria within the Clean Water Act may have improved the chemical quality of the nation's waters, it has been woefully inadequate in protecting the biological health of those same waters. Clean, "pure" water may meet chemical, water quality standards, but still be devoid of aquatic life. Unfortunately, efforts to "clean" our waters have not only not protected aquatic life, but in some cases have actually harmed it.

A specific example in Illinois tells the story best. A major thrust of the original 1972 Act was to encourage the expansion and development of wastewater treatment programs. The assumption built into most of these programs was that reductions in chemical loading will improve biological integrity as well. However, a study of the effects of wastewater treatment on three Illinois streams by Karr, Heidinger and Helmer¹ demonstrated quite a different result. The biological integrity of the streams -- species composition, predator relationships, food availability, flow regime, channel morphology, etc. -- was the highest upstream of the point where the "purified" wastewater treatment waters came in. Biological integrity was at its lowest at points immediately below the wastewater outfall. Furthermore, the fish community never fully recovered farther downstream from these efforts to "clean up" our streams.

In 1990, EPA issued a policy statement encouraging States to develop narrative biological criteria by 1993, and published a guidance document for States to use in developing biological criteria in their water quality programs, yet few States have complied. The State of Ohio, however, which has developed a model program for including biological criteria in its water quality program, is the exception. Some of the State's preliminary findings offer additional incentives for other

¹Karr, James R.; Heidinger, Roy C.; and Helmer, Eileen H.: "Effects of chlorine and ammonia from wastewater treatment facilities on biotic integrity," in *Journal Water Pollution Control Federation*, September 1985, 57:9, pp. 912-915.

States' to follow Ohio's lead: Studies conducted by the State concluded that 36 percent of recorded biological damage cannot be detected by traditional chemical criteria. Even more compelling, 50 percent of the impaired waters in Ohio would be misclassified as attaining Clean Water Act standards if biological damage was not considered.

BIOLOGICAL CRITERIA

Throughout the Clean Water Act, an effort must be made to broaden the thinking of the public, federal agencies, States, and Congress toward "pollution" and the protection of "water quality". While the 1987 amendments to the Act expanded the definition of pollution to include alteration of chemical, physical and biological stream features, the perception of pollution and the orientation of EPA implementation of the Act still leans heavily toward chemical considerations. Accordingly, we recommend the following changes:

- The Act could go a long way towards educating the public and policy makers regarding the biological health of our nation's waterways by universally changing the word "pollution" to "degradation" or "adverse activity", and replace "water quality" with "ecological health of the water resource".
- Section 303/304 water quality standards should be revised to require States to incorporate criteria related to ecological health in addition to those more traditional chemical criteria in state water quality standards. The States should also be required to meet such standards. Biological criteria should include the following:
 - habitat structure which includes channel morphology, water depth and velocity, spatial complexity of physical habitat;
 - flow regime which includes water volume and distribution;
 - energy sources which include type, amount and size of organic material entering stream, availability of food sources; and
 - biotic interactions which include competition, predation, disease, and parasitism²

²Karr, James R.: "Defining and assessing ecological integrity: Beyond water quality," *in Environmental Toxicology and Chemistry*, September 1993, 12:9, pp. 1-11.

- Section 305 relating to water quality monitoring should be revised to incorporate comprehensive, mandatory monitoring of the ecological health of a waterway, including the monitoring of the biological criteria listed above. The Index of Biotic Integrity (IBI) developed by Dr. James Karr in 1981 and used extensively in many areas could easily be used as a model biological monitoring program. The IBI includes 12 measures which compare the biological values (listed above) of a specific stream with those expected of a relatively pristine stream.

- Amend new section 402(e)(1)(A) (relating to the consultative role of the Fish and Wildlife Service and the National Marine Fisheries Service in the biological assessment of state permits) to require the consultation of such agencies. The bill is drafted would allow the Administrator to choose whether to consult or not.

Additionally, the consultative role of these agencies should go well beyond sensitive aquatic species and require consultation on the health of all aquatic species. While it is helpful to recognize aquatic species which are in trouble, a comprehensive aquatic gameplan could secure broad, ecological health of streams and prevent hundreds of future endangered species. Accordingly, section (a), which now prohibits permits on those discharges that affect a "balanced population of shellfish, fish, and wildlife," should be broadened to include "healthy populations of aquatic species" or to "maintain the biological integrity of river systems."

SECTION 401-STATE CONDITIONING AUTHORITY

Need for Clarification

In keeping with our belief that the Clean Water Act should address a broad range of aquatic health issues, we support section 602 of S. 1114, which reaffirms the States' ability to deny water quality certification to applicants for federally-licensed activities which adversely affect state water quality standards. This provision is particularly important to the States in controlling or stopping federally-licensed hydroelectric projects which would jeopardize fisheries, aquatic health, recreational activities and the like by altering stream temperature, velocity, turbidity and channel structure. We do, however, believe that this section should be broadened to clarify that state water quality certification can be used on a broad range of federal activities, consistent with new responsibility given the States in S. 1114.

The language in the bill makes clearer what is already explicit in section 401(a)(1), that in order to obtain certification, the applicant must be able to demonstrate that the permitted or licensed activity will comply with several provisions of the Clean Water Act, including section 303. Section 303, in turn, has provided since its inception that water quality standards "shall consist of the designated uses of the navigable waters Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and . . . other purposes" EPA's water quality standards regulations, in turn, require state water quality standards to be comprised of three separate parts: designated uses of the waters, which include all the uses set out in section 303 (including fisheries, recreation, etc.); criteria designed to achieve and maintain the uses; and an antidegradation provision which prohibits the degradation of any existing uses of the waters. 40 C.F.R. §131.10 - 131.12.

The reason for this clarification stems from challenges to the States' authority to condition the grant of certification in various ways designed to ensure that existing or designated uses would not be degraded, as required by federal law and regulation.

For instance, the Vermont Supreme Court has held that water quality certification could be conditioned on the provision of a certain amount of spill over a FERC licensed dam, both because without the spill, the State's dissolved oxygen standard would be violated, and because Vermont's water quality standards require that the waterway in question be managed for "water of a quality which consistently exhibits good aesthetic value . . . and recreation."³ The applicant, however, has kept the State in litigation over this condition for several years and has petitioned the Supreme Court for review of Vermont's highest court.

In another case from Washington State,⁴ although the waterway in question was designated for salmon spawning, rearing and migration, and the State's scientists found that a certain flow of water was necessary below the licensed dam in order to maintain that use in the river, the applicant has kept the State in litigation over that condition since 1986. And although Washington's highest court ruled unanimously that the instream

³ Georgia Pacific Corp. and Simpson Paper (Vermont) Co. Inc., Vt. Sup. Ct. No. 91-530, September 14, 1992.

⁴ Department of Ecology v. PUD No. 1 of Jefferson County, 121 Wash. 2d 179 (1993).

flow condition was not only allowed but necessary under federal law to prevent degradation of the existing uses of the waterway, the applicant is now seeking review by the U.S. Supreme Court. Over 200 stocks of salmon in the Pacific Northwest are at risk of extinction, including salmon in the river in this case. If the States cannot protect these designated uses, and have to engage in litigation for 10 years over each such condition, water quality certification is an empty shell.

The new provision of section 401 would also clarify that it is the activity which affects water quality standards that must be certified, and may be conditioned on state requirements that will ensure compliance with state water quality standards. The predecessor to section 401, Section 21(b) of the Water Quality Act, was clear in this regard. The substitute in S. 1112, that any such activity will so comply, merely clarifies that the discharge is not to be viewed in isolation from the licensed activity as a whole, as originally intended in Section 21(b) of the 1969 Water Quality Improvement Act, the almost verbatim predecessor to section 401(a).

When Congress amended the statute in establishing the original Clean Water Act in 1972 to state that "any such discharge will not violate [water quality standards]," it appears to have had no intention of altering the effect of the original provision. Rather, the legislative history makes several references to the revised section as being substantially the same as section 21(b), which Congress amended merely to assure consistency with the bill's changed emphasis from water quality standards to effluent limitations. Otherwise, the legislative history acknowledges only "minor" changes in the new provision.⁵

Any other interpretation works absurd results, which unfortunately have been advocated by applicants for certification in order to avoid complying with state water quality standards. For instance, in a case from a trial court in Pennsylvania, Pennsylvania Department of Environmental Resources v. City of Harrisburg, 578 A.2d 563 (Pa. Cmwlth. 1990), the court held that while Pennsylvania could evaluate the effects of a proposed dam licensed by the Federal Energy Regulatory Commission on downstream water quality, it could not evaluate the effects of the project upstream of the proposed dam. Thus, Pennsylvania was precluded from taking into account upstream effects of the proposed dam, even though it might degrade and indeed eliminate designated and existing uses of the waterway.

⁵ See, e.g., S. Rep. No. 414, 92d Cong., 1st Sess. 69 (1971); H.R. Rep. No. 911, 92d Cong., 2d Sess. 121-14, 165 (1972); 117 Cong. Rec. 38,857 (1971).

Moreover, the court also held that Pennsylvania was precluded from considering the biological and physical impacts of the project upon its waters. That result, too, is ludicrous in light of the States' authority to adopt water quality standards that protect and maintain state waters' chemical, biological and physical integrity and their designated and existing uses, and resulted from the court's cramped interpretation of the term "discharge" in section 401.

An expanded section 401

Section 401 has been a powerful tool for some States in their efforts to address a wide variety of threats to the ecological health of their waters. But inconsistent court rulings have frustrated the States and kept 401 from being the significant ally it should be. Moreover, section 401 is not explicit in granting authority to the States to control activities other than those considered point sources. Since S. 1112 gives additional new responsibility to the States in controlling polluted runoff, it is appropriate to give the States the wherewithal to limit federal activities which could severely threaten those objectives.

We, therefore, endorse the following amendment to section 602 revising the first sentence of section 401 as follows:

"Any applicant for a federal license or permit to conduct any activity, and any Federal agency proposing to conduct any activity or allow any activity on Federal land, including, but not limited to, the construction or operation of facilities, which may result in any discharge into or other alteration of the navigable waters, or any activity for which management measures are required under section 319, shall provide the licensing or permitting agency a certification from the State in which, or nearest to the point at which, the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters [at the point] where the discharge originates or will originate, that the activity [any discharge] will comply with the applicable provisions of sections 301, 302, 303, 306, [and] 307, 402 and 319 [of this Act], and that any such activity will comply with water quality standards issued under section 303 and allow for the protection, achievement, and maintenance of designated uses included in such standards."

This expanded section 401 would achieve the following:

- Clarification that the States have the authority to set conditions on a broad range of federal activities which adversely

affect state water quality standards through both polluted runoff and point source discharges.

- Clarification that the States have the authority to set conditions on wetlands and other alteration of the physical structure of waterways.

- Clarification that the States have the authority to set conditions on federal activities which are outside their boundaries.

A memo is enclosed with this testimony which offers a more thorough description of the proposed section 401 amendment and the rationale behind it.

OUTSTANDING NATIONAL RESOURCE WATERS (ONRW)

We applaud the provisions in S. 1112 which require States to establish strong programs to protect their most pristine waterways. The lack of a clear, statutory mandate in the past has resulted in inconsistent policies and implementation of the ONRW program by EPA, and a mishmash of state programs, few of which really do the job. S. 1112 assures the protection of outstanding waters by directing each State to 1) develop a program to protect its outstanding waters within two years; 2) include all waters within certain federal designations, such as wilderness areas, national parks, and wild and scenic rivers; and 3) include within its antidegradation policy assurance that outstanding waters will meet water quality standards.

While S. 1112 goes a long way toward reaching the goal of protecting pristine waters, we do suggest two amendments:

- Paragraph (3)(B)(ii) which provides de facto ONRW protection for certain federally designated areas, including wild and scenic rivers, should be amended to include only "wild" and "scenic" classifications and exclude those rivers classified as "recreational." Designated wild and scenic rivers are classified either "wild," "scenic," or "recreational," based primarily on the amount of development along the stream. While most "wild" and "scenic" classified rivers enjoy pristine water quality, many of the "recreational" segments are developed and often run through urban areas, and may therefore not be suitable candidates for ONRW status. "Recreational" rivers should, however, retain the same opportunity to be classified as ONRW as other segments, but should not be automatically designated without further analysis and investigation by the State.

• Paragraph (3)(E) should be amended to require the State to protect the overall "ecological health of all outstanding national resource waters" not just for the "protection and propagation of a balanced population of fish, shellfish, and wildlife, and recreation" as currently in the bill. While we certainly support the protection of fish and wildlife, the ecological health of a river system is much broader than protecting specific uses. As noted earlier, ecological health of a stream includes not only chemical water quality, but habitat structure, flow regime, energy sources and biotic interactions. The nation's most pristine waters clearly should enjoy the highest and most complete level of protection available.

We appreciate this opportunity to submit testimony for the record and would be glad to answer any additional questions or provide clarification as necessary.

MEMORANDUM

TO: Mike Evans, Steve Schimberg, Bill Leary, Jeff Peterson,
Jimmie Powell

FROM: Bob Adler, NRDC
Bruce Carpenter, New York Rivers United
Katherine Ransel, Beth Norcross, American Rivers

RE: Section 401 provision of S.1114

DATE: September 28, 1993

Section 602 of S.1114, taken from a bill introduced by Senator Jeffords, would add to the end of the first sentence of section 401(a) the following: "... and that any such activity will comply with water quality standards adopted under section 303 and allow for the protection, attainment, and maintenance of designated uses included in the standards."

This language clarifies that states have the authority under section 401 to deny or condition water quality certifications based on use impairment, not just violations of chemical water quality parameters. We believe this is consistent with Congress' intent, and will help in a range of cases in which the authority of states to condition FERC licenses has been challenged.

We support this language as far as it goes. However, it does not address all of the problems with the current scope and judicial interpretation of section 401. We propose that the first sentence of 401 be revised more comprehensively, as follows:

Any applicant for a federal license or permit to conduct any activity, and any Federal agency proposing to conduct any activity or allow any activity on Federal land, including, but not limited to, the construction or operation of facilities, which may result in any discharge into or other alteration of the navigable waters, or any activity for which management measures are required under section 319, shall provide the licensing or permitting agency a certification from the State in which, or nearest to the point at which, the discharge originates or will originate, or, if appropriate, from the interstate water pollution control agency having jurisdiction over the navigable waters (at the point) where the discharge originates or will originate, that the activity (any such discharge) will comply with the applicable provisions of sections 301, 302, 303, 306, [and] 307, 402 and 319 [of this Act], and that any such activity will comply with water quality standards issued under section 303 and allow for the protection, achievement, and maintenance of designated uses included in such standards.

The proposed language would clarify that:

1. Section 401 applies to the full range of federal activities that may affect state waters. S. 1114 would impose appropriate but significant new obligations on states to meet water quality standards by improving controls on polluted runoff and other sources. To meet this obligation, states should be given the legal tools to assure that activities on federal lands, including runoff from hydro projects, construction, logging, mining, grazing, etc., are properly addressed. Inequities could result if similar activities on state or private lands are required to impose stricter controls than on federal lands.

2. Section 401 applies to runoff as well as point source discharges. As noted above, states will be increasing their focus on land management practices that will reduce runoff impacts, in order to restore watersheds and meet water quality standards. This will clarify that states have the necessary authority to certify whether runoff impacts from federal activities will have unacceptable water quality impacts.

3. Section 401 is available to states whose waters are affected by a federal activity outside its boundaries. For example, Florida tried to certify that a federal offshore oil and gas lease sale (in federal waters) would cause violations of water quality standards within state waters. The Ninth Circuit ruled that Florida lacked the authority to issue a 401 certification with respect to activities occurring in federal waters, regardless of instate impacts. (This problem was addressed in a bill introduced by Senator Graham last Congress.)

4. Section 401 applies to wetlands fills and other physical alteration of water bodies. This would clarify that states have the authority to assist in wetlands protection through 401 certifications even if they choose not to assume program delegation.

We are seeking support for this proposal from ASIWPCA and NGA.

Background

Section 401 potentially can be an extremely potent tool for states in protecting the integrity of their waters. It gives states water quality control over a wide range of activities for which they otherwise might lack authority. Some states have used section 401 to admirable effect. For example:

- * Maine used section 401 to impose oil spill prevention as well as other water quality requirements on a proposed oil refinery and deep water terminal.¹

- * Massachusetts denied water quality certification for a Corps of Engineers' nationwide permit under section 404(e) of the Act (discussed below), requiring individual scrutiny for wetlands fills that otherwise would have been approved automatically.²
- * Washington conditioned its certification of a hydroelectric project on specific requirements designed to protect salmon.³
- * Oregon was allowed to condition water quality certification on land use restrictions, so long as it could show that those restrictions were necessary to ensure compliance with water quality standards.⁴

Unfortunately, there is no central source of information on the workings of this potentially powerful section of the Clean Water Act. For example, EPA indicated that no systematic information is maintained on state 401 programs, and worse yet, the issue is not even formally assigned to any single branch in EPA's Office of Water in Washington, D.C.⁵ The only agency rules on state water quality certification were issued in 1971, based on the statutory predecessor to section 401, and provide little guidance to states on substantive aspects of the program.

Moreover, while some courts have interpreted section 401 with appropriate breadth (examples of which are summarized above), others have narrowly constrained the activities states may review under section 401, and the types of concerns they may address in water quality certifications. For example:

- * A federal court in Pennsylvania ruled that section 401 certification was necessary only for the state in which the facility is located, not where the actual discharge is located.⁶
- * A federal appeals court agreed in a case involving offshore oil and gas drilling that states receiving the impacts of federally-licensed activities in federal waters (in this case Florida) have no authority to deny or condition water quality certification.⁷
- * A state court in Pennsylvania found that the State could not base its water quality certification on physical and biological impacts (such as impacts to wetlands and fish migration), but rather must be limited to chemical changes related to direct discharges of pollutants.⁸
- * Courts in New York State repeatedly have limited certification authority to violations of chemical water quality standards.⁹

These and other cases pose several serious problems. Many of the most serious impacts to aquatic resources are physical and biological, and not purely chemical in nature. States are just beginning to address these broader impacts in their water quality standards and monitoring programs, much less in their water quality certifications. If these courts are correct that states may only use section 401 to address chemical impairment, how can states protect the physical and biological integrity of their waters, as required by the Act? If fisheries and other aquatic resources are being destroyed by physical rather than chemical impacts, is it not artificial to limit states to tools that address chemical pollution? Since the courts are divided on this issue, the overall success of the 401 program may turn on Congressional clarification of state authority in this area.

Notes

1. Roosevelt Campobello Int'l Park Comm'n. v. EPA, 684 F.2d 1041 (1st Cir. 1982).
2. United States v. Marathon Development Corp., 867 F.2d 96 (1st Cir. 1989).
3. PUD No. 1 of Jefferson County and the City of Tacoma v. Departments of Ecology, Fisheries and Wildlife, (No. 58272-6, WA S.Ct.) (April 1, 1993).
4. Arnold Irrigation District v. Department of Environmental Quality, 717 P.2d 1274 (Or. Ct. App. 1986). A complete review of judicial decisions interpreting section 401 was conducted recently by the Congressional Research Service. Memorandum from American Law Division, CRS to House Committee on Interior and Insular Affairs, "Scope of State Authority to Condition or Deny Section 401 Certifications under the Clean Water Act: Review of State Case Law," December 21, 1992.
5. Personal communication, Geoffrey H. Grubbs, Director, Assessment and Watershed Protection Division, U.S. EPA, October 20, 1992.
6. Lake Erie Alliance for the Protection of the Coastal Corridor v. Army Corps of Engineers, 526 F. Supp. 1063, 1074 (W.D. Pa. 1981).
7. NRDC v. EPA, 863 F.2d 1420, 1434-36 (9th Cir. 1988).
8. Commonwealth of Pennsylvania, Department of Environmental Resources v. City of Harrisburg, 578 A.2d 563 (Pa.CmwltH 1990).
9. E.g., de Rham v. Diamond, 295 N.E. 2d 763 (N.Y. 1973); Power Authority of New York v. Williams, 457 N.E. 2d 726 (N.Y. 1983). Other cases are discussed in the Congressional Research Service analysis cited above.

TESTIMONY OF DAVID S. BARON
ASSISTANT DIRECTOR, ARIZONA CENTER FOR LAW IN THE PUBLIC INTEREST
TO THE

SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON

S. 1114: REAUTHORIZATION OF THE FEDERAL CLEAN WATER ACT

August 31, 1993

This testimony is offered on behalf of the Arizona Center for Law in the Public Interest, a nonprofit public interest law firm with offices in Phoenix and Tucson, Arizona. The Center has conducted litigation and advocacy under the Clean Water Act for more than a decade, representing environmental groups and conservationists. We have participated extensively in the adoption of state water quality standards, the development of NPDES permits for major dischargers, and the development of pretreatment programs in our largest cities. We have also filed a number of successful citizen suits to enforce NPDES permit provisions and other requirements of the Act.

The Center would like to respond to testimony presented to the Committee on August 4, 1993 by the Western Coalition of Arid States (WESTCAS). In that testimony, WESTCAS urges several radical changes in existing law and policy on water quality standards. Among other things, the group argues that the Act should only require water quality sufficient to protect wildlife that still survives in a river or lake - not species that would live there if water quality were restored to pre-pollution levels. In addition, WESTCAS asks for separate "western" water quality criteria that

would presumably be different (and weaker) than criteria for the rest of the country. These proposed changes are completely unjustified, and flatly contrary to the Act's basic goals of restoring the nation's waters and achieving fishable, swimmable quality throughout the country.

WESTCAS starts with the premise that many western rivers are ephemeral in nature, flowing only in response to major storm events. In a number of these rivers, the only flow for much of the year comes from municipal sewage effluent. The group then asserts that national water quality criteria are designed to protect species "that may not even exist" in such rivers. Finally, WESTCAS contends that it will cost "billions" of dollars to meet national water quality criteria in ephemeral streams, and that the benefit is not worth the cost.

The WESTCAS testimony is fundamentally flawed in a number of key respects. First of all, it is not correct to say that ephemeral streams in the West flow only in response to major storm events. Some of these rivers flow for many months during wet years, even in the absence of a single major storm event. Examples include segments of Arizona's Salt, Gila, and Santa Cruz rivers.

Second, the WESTCAS testimony misleadingly implies that current law requires the same water quality standards for ephemeral as perennial streams, even if the ephemeral stream has insufficient flow to support aquatic life. In reality, EPA regulations have long allowed states to set different standards for rivers with flows that are too low to support particular species. 40 C.F.R.

§131.10(g)(2). EPA also allows states to set water quality standards reflecting unique characteristics of a river's indigenous wildlife. Although EPA has adopted national criteria for protection of aquatic life, a state can vary from those criteria based on a showing that its native fishes are hardier (or less hardy) than those relied on by EPA. See 40 C.F.R. §131.11.

Third, there is no support for WESTCAS' doomsday prediction of billions of dollars in additional costs for municipalities to comply with existing law on water quality standards in ephemeral streams. Documentation for this claim does not appear in the group's testimony, and we believe it to be little more than shrill rhetoric. Similar claims were made two years ago by the City of Phoenix, when EPA proposed to adopt more stringent effluent limitations for the City's wastewater plants. The City asserted that it would cost \$100 million or more to meet new limits designed to protect wildlife and environmental values in the Salt and Gila rivers. EPA adopted the tougher limits anyway, and the City has in fact been able to meet all of them without spending additional funds beyond those it had intended to spend anyway on treatment plant improvements.

Typically, toxics are the pollutants of greatest concern with respect to protection of aquatic life and wildlife in ephemeral streams. This is because fish and wildlife are often affected by extremely low levels of toxic pollutants, necessitating strict standards to protect the ecosystem. But this does not mean that municipalities must install expensive treatment equipment to remove

toxics from their effluent. In most cases, toxics in municipal wastewater come primarily from industrial discharges to the sewer system. Cities can meet stream standards for toxics by requiring industries to remove these toxics before discharging to the sewer. Such pretreatment programs put the cost of cleanup where it belongs - on the responsible parties. Phoenix has been able to meet its new permit limits by upgrading its pretreatment program: No new treatment for toxics was required at the municipal wastewater plants.

We also oppose WESTCAS' call for separate water quality criteria for the arid west. EPA's national water quality criteria are based on representative species, and there is no evidence that western fish and wildlife are, as a class, markedly different from those relied on by EPA. Individual species found in the west may be more or less resistant to different pollutants, but current law already allows states to adopt standards that vary from the national criteria based on species-specific information. See U.S. EPA, Water Quality Standards Handbook at 4-2 (Dec. 1983). Current law also allows states to adapt national criteria to local conditions that affect the toxicity of specific pollutants. For example, the toxicity of metals to aquatic life often varies depending on the hardness of the water. EPA's national criteria for metals assume a certain level of hardness, but states can adjust the criteria based on the hardness of their own surface waters.

Thus, there is plenty of flexibility built in to the current

law to adopt standards that reflect unique local conditions. For this reason, we suspect that such concerns are not the true motivation for WESTCAS' position. Rather, WESTCAS is upset because effluent must ordinarily meet stream standards at the point of discharge when there is no other flow in the river. In contrast, facilities discharging into a flowing stream can usually establish a "mixing zone" in which their effluent is diluted by stream water before compliance with stream standards is measured. The nub of WESTCAS' complaint is that western municipalities that discharge into normally dry streams cannot claim any dilution credit from the stream itself, thus requiring them to meet more stringent pollution limits at the point of discharge than cities discharging into flowing streams.

The fact that stream standards may be harder for some cities to meet than others hardly justifies a separate set of water quality criteria for those cities. The purpose of the Clean Water Act is to protect the nation's rivers and lakes for wildlife, recreation, and other uses. The water quality standards necessary to protect those uses must be based on objective, scientific criteria - e.g., the level of a given toxic that presents a threat to fish, or the level of bacteria that threatens human health - not on how easy or hard it might be for a given discharger to reduce pollution levels. Carried to its logical conclusion, the WESTCAS position would require EPA to set different standards for literally every river and lake in the Country based on differing flow levels, wastestream composition, and cost of treatment technologies.

Moreover, the situation faced by cities discharging into dry rivers is neither as unfair or unique as WESTCAS implies. There are situations where a discharger into a flowing stream may have to meet limits as stringent or even more stringent than stream standards. This could happen, for example, where stream standards are already being violated and no further degradation can be allowed. Moreover, while some western cities do not have the "benefit" of perennial streams to dilute their wastewater, some of these cities have much less industrial waste to deal with than their eastern counterparts. Congress will find itself on a slippery slope indeed if it begins to set different water quality standards for different parts of the Country based on claims that it is harder for one region than another to reduce pollution.

We also do not agree with WESTCAS' proposal that biomonitoring be used only as a warning device and not as an enforcement tool. NPDES permits for large municipalities typically contain monitoring requirements and effluent limits for only a small fraction of the toxic pollutants discharged into the wastestream. Although there are an estimated 50,000 chemicals on the market, NPDES permits rarely address more than the 126 priority pollutants. Moreover, water quality criteria for individual pollutants do not ordinarily account for the synergistic or cumulative affects of multiple pollutants in a wastestream.

Biomonitoring addresses the above-described gaps in the current program. It forces municipalities to assess the real-world impact of complex waste streams on living organisms. But without

enforceable toxicity limits, such monitoring will likely turn into an empty exercise. A city that finds 0% survival of test organisms in its effluent will have little incentive to eliminate the cause if its only mandate is to conduct more testing. If the city is facing fines and other sanctions for such toxicity, however, it will have a powerful incentive to track down and eliminate the cause. It will also have a strong motivation to institute a serious pollution prevention program to reduce the discharge of all toxic wastes into the sewer system: clearly a highly desirable result.

In Arizona, NPDES permits for municipal wastewater plants in Phoenix, Tucson, and Nogales all have biomonitoring limits and enforceable toxicity limits. These limits have not produced undue hardship or difficulty - indeed, the cities are generally meeting the limits (although we believe the limits to be too lax). They have, however, forced the cities to take their pretreatment and pollution prevention programs far more seriously.

Finally, we fundamentally disagree with WESTCAS' suggestion that water quality standards should only protect "what is there" - i.e., species that still survive in an already polluted river. An original, and still laudable goal of the Clean Water Act is to restore the nation's waters. Many of the "dry" rivers cited by WESTCAS were once free flowing streams, rich in aquatic and riparian life. Their current state of desiccation is the result of human activity, including diversions to supply the very cities that now discharge effluent into them. The return of wastewater to

these rivers should not be viewed as a gift of grace from the discharging municipalities, but rather an obligation on the part of these cities to revitalize at least some of natural ecosystem that they have destroyed. In this light, stream standards for ephemeral and effluent dominated rivers should be sufficiently stringent to restore these waters, so that they can support a rich array of indigenous wildlife - not just species that have survived the onslaught of pollution.



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**Association of State and Interstate
Water Pollution Control Administrators (ASIWPCA)**

**Testimony Before the Senate Subcommittee on Clean Water, Fisheries and
Wildlife**

WATERSHEDS

By

**Steve Tedder
Chief, North Carolina Water Quality Section
of the Division of Environmental Management**

August 1993

Mr. Chairman, Members of the Subcommittee, my name is Steve Tedder and I am the Chief of the Water Quality Section of the Division of Environmental Management for the State of North Carolina. I appear before you today as a representative of the fifty State Water program officials responsible for the implementation of the nation's Clean Water program.

As co-chair of the Watershed Work Group for the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA), I am pleased to present this testimony and to introduce our Executive Director, Roberta Savage and our Deputy Director, Linda Eichmiller.

I am here today to endorse the concept of watershed protection, as a management tool to be used by State and Local governments. Watershed management is not program in the traditional bureaucratic sense. It is a philosophy and it is not new. As you indicated, Mr. Chairman, the creators of the 1972 Clean Water Act were keenly aware of the need to consider our waters in a holistic manner, to in essence, manage the water resource as a total system of surface and groundwater, point and nonpoint sources, quality and quantity.

Under Section 303 we were encouraged to plan basin-wide. In Section 208, we were to manage on an areawide basis. The concept is already embodied in statute and we in North Carolina, along with my colleagues in a number of other States, have made watershed management a reality with existing legislative authority. We do not need, nor will it be productive to initiate, major or extensive statutory reform to implement the "watershed philosophy." We certainly do not need to create an entirely new program or a new level of government to manage a philosophy. To be effective, the "watershed mentality" needs to be incorporated into the State "management mindset" as a way of doing daily business.

EXISTING CONGRESSIONAL WATERSHED DIRECTIVES

- Section 201 (c) - Areawide Treatment/Management
 - Section 208 (a) - Areawide Waste Treatment Plans
 - Section 208 (b) - Areawide Waste Treatment Management Planning
 - Section 303 (d) - Water Quality Standards/Priority Ranking of Waters
 - Section 303 (e) - Continuing Planning Process
 - Section 319 (a) - NPS Management Program
 - Section 319 (b) - NPS State Management Plans
-

At the Federal level we need to have willing counterparts who can be as creative, as we are eager, to implement this process. States need the latitude to:

Focus on priority water problems.

Focus staff and resources on those priorities.

Work with USEPA to eliminate unnecessary barriers and bean counting.

A word of caution is warranted as I begin my description of what we have determined to be a successful watershed process.

- 1) First, watershed management must be coordinated through the State agency. The concept will surely fail if the State regulatory agency and its many water related programs are not the pivotal focal point. This is not to say that Local governments, members of the public and/or constituent groups should not play a critical role. On the contrary, their involvement is essential to the overall success of any watershed approach. The simple fact, however, is that the Governor and the Executive Agency have the constitutional authority and responsibility to protect the health and welfare of the citizens of their State. Clearly, comprehensive water management falls within this jurisdiction. We can not have a multitude of entities going off in different directions inconsistent with Clean Water mandates.

- 2) As indicated, Local governments, the public, the farmers, the industries, the environmental community and other interested constituent groups have a critical role to play. Timing, however, is critical to the overall success of the "watershed philosophy." As we learned from 208, there is a major price to be paid if we halt programs and efforts underway to launch a massive national planning or public awareness campaign twenty years into the Clean Water Act. A massive "get involved now" movement orchestrated by the Federal government can serve only to breed unfulfilled expectations, public discontent and ultimately a less successful watershed protection process. This is particularly the case since there are no additional funds to carry out the water program.

Citizens will demand, and have every right to expect, that their investment of time in any governmental process, yields substantial and significant results. My point here is this, we do not want to ask the public to "get all dressed up" and excited about attending a party when what is needed is a new mindset on carrying out business. In some States the watershed process is well underway. In this instance, public involvement is critical now. In other States, the concept is just beginning to be considered and public involvement (outside the extensive existing channels) would be premature.

Having shared some of the generic concerns of the States, let me now focus on the concept of watershed protection and highlight for you just how North Carolina and other States have integrated programs to achieve a comprehensive plan.

WATERSHED APPROACH

Basin-wide water management enables States to develop comprehensive, long range management strategies to protect our nation's waters in an effective and consistent manner.

The watershed philosophy is becoming more popular with the States, because if properly utilized, it can serve as a cost cutting measure, it can focus limited staff resources on priority water problems and it can generate public interest in protection while continuing to enhance the waters of the State. Using the watershed process we have learned that:

- * States can rationally and cohesively incorporate: 1) chemical-specific monitoring and regulations; 2) bio-criteria, bio-assessments, and bio-surveys; 3) water quality modeling and planning; 4) whole effluent toxicity testing; 5) the NPDES program; 6) standards setting and

revision; 7) protection of public health and welfare; and 8) protection, restoration and management of natural resources, including wetlands.

.. It is the most effective way to integrate point and nonpoint source management.

- * Requirements of the Clean Water Act, USEPA regulation and State mandates can be met in an efficient and effective manner. We have identified, in essence, a method to assure that environmental protection activities can be coordinated and consistent.
 - .. Innovative management approaches can be more effectively utilized.
 - .. Sound economic growth and planning, coupled with equitable distribution of assimilative capacity, can usually be accommodated without degrading water quality.
 - .. Assessment and consideration of interactions among environmental stresses (e.g. cross-media, population, industrial and agricultural activities, etc.) can be more closely examined, and contributions from nonpoint sources can be addressed more explicitly.
- * The watershed targeting process enables States to realistically identify priorities. The framework facilitates development of water quality management strategies that achieve optimal environmental results.
- * Greater Statewide support can be generated when the public and interested constituent groups are actively involved in a water quality planning and management process that is more understandable.

**BASIN-WIDE/WATERSHED
ADVANTAGES**

- | | |
|------------------|---------------------------|
| • Efficiency | • Resource Management |
| • Effectiveness | • Public Involvement |
| • Consistency | • Adaptability |
| • Predictability | • Political Achievability |

If changes are made to the existing statute, the following principles should be incorporated.

1. To be successful, watershed protection must remain a voluntary management philosophy. Viewing it as another layer of requirements will not work. What States need are incentives to undertake what the Act has embodied since 1972.
2. State governments must continue to have full responsibility for managing water quality and quantity, as it relates to maintaining designated beneficial uses, etc. Regional, geologic and climatic conditions controlling water quality, availability and volume must be taken into consideration when developing a watershed approach. The Federal government must not mandate or restrict delegation of a particular State's water resources management authorities.

3. Institutional arrangements should be the prerogative of the State based on constitutional authorities, coupled with the unique legal, economic and social conditions in each State.
4. Flexibility should be available to accommodate Statewide basin management approaches. Including, but not limited to, Federal adjustments in:
 - a. Required outputs (and/or bean counting) including trade-offs or disinvestment from traditional requirements.
 - b. Timing of deadlines and categorical requirements in order to realign program operations to a watershed philosophy.
 - c. Traditional ("it is the way we've always done it") procedures.
5. USEPA oversight should be confined to a post audit procedure, which evaluates achievement of overall water quality objectives and existing statutory requirements, since their role is already extensive. USEPA should be encouraged to use existing institutions, States, Interstate Agencies and Local governments.
6. States recognize that public participation is essential. Innovative approaches, with emphasis placed on creating catalysts for State basin management activities, need to be created.
7. Pollution prevention and resource conservation should be incorporated as essential components of watershed protection.

Keys To Success

- **Consolidate Grants**
- **Consolidate Reporting**
- **Reduce Fragmented Clean Water Act Implementation**
- **Realistic Timetables**
- **Minimize and Consolidate Reporting**
- **Ten-year NPDES Permit/Extension Options**
- **Avoid "One Size Fits All"**
- **Allow State Flexibility**
- **Avoid Bureaucratic Hoops & Widgets**
- **Encourage the Concept/Do Not Mandate or Sanction**
- **Eliminate the Barriers/Do Not Create More**

SPECIFIC COMMENTS ON S. 1114

The Clean Water Act of 1972 was grounded in the concept of watershed management. In developing and implementing the multitude of policies and funding sources however, that go in different directions, the national program has lost sight of this fundamental philosophy. States appreciate the Senate's efforts to identify a mechanism to maximize environmental results. The timing is right to focus on the watershed approach and States have already taken the lead in doing just that.

It must, however, be emphasized that watershed management is not another layer of government or requirements -- it is a way of doing business. States currently involved in the watershed process

have created a strategic approach with no new money. This is possible only if it is indeed a philosophy and not a "new program." Incentives, however, do need to be addressed and impediments removed to accomplish the desired objective. In reauthorization, it is important that S. 1114:

- Encourage the watershed process of management to be fully achieved.
- Not undermine State efforts currently underway.
- Recognize State authority for water management.
- Allow, but not mandate, use of existing funding sources.
- Recognize that watershed management is an evolutionary or iterative process that will take years to fully achieve.
- Provide the necessary Federal flexibility to allow USEPA and the States to design a meaningful process to focus on priority water problems.

**How Does the Basin-wide Approach Differ From
the Existing Act?**

	<u>Previous</u>	<u>Basin-wide</u>
Permitting:	One at a time	Collective
Water Quality Studies:	Scattered	Focused
Nonpoint Source:	Independent from Point Source	Integrated TMDL Approach
Basin-wide Plan:	No	Yes

Consolidation

Senate Bill S. 1114 should allow States to consolidate existing requirements so that basins can be managed as a unit, under which existing programs are coordinated and decisions are made.

- The Bill needs to allow States to consolidate grants to effectively and efficiently develop and carry out watershed plans.
Currently, S. 1114 does not address such consolidation.
- The Bill needs to consolidate and create a realistic schedule for reporting requirements (e.g. 5 years).
Currently, S.1114 addresses this issue and States encourage additional emphasis in this area, with more consolidation.
- Both the point and nonpoint source programs should be embraced within the watershed concept.

S. 1114, in contrast, views the point and nonpoint source programs as separate command and control entities.

Requirements

To take a "one size fits all" approach will most certainly doom the watershed process to failure. To mandate "you must do it this way," undermines the integrity of existing State programs and actually discourages States from undertaking watershed management. Barriers must be eliminated, not created,

- **The watershed management process will take time to evolve and for this reason timeframes need to be realistic.**

S. 1114 deadlines and timetables are unachievable given the plethora of requirements incorporated in the existing statute. A streamlined or unified process for watershed protection is needed under which States have flexibility to achieve the multitude of mandates.

- **Program stability is essential to an effective Statewide process.**

States cannot proceed with watershed management, if at the same time, they are forced to make significant changes in water quality standards, as required by S. 1114. The environmental goal posts must be clearly identified at the outset for the concept to work.

- **States oppose the creation of a new layer of programs or requirements which would take away the incentive to proceed.**

S. 1114 treats watershed management as yet another program, in a bureaucratic and expensive exercise. There are no additional Federal funds and States are already deluged with too many requirements and deadlines. The watershed philosophy needs to be incorporated into the very fabric of State, Federal and Local government decision making to make rational use of the many programs already in place.

There is no need for more deadlines, gubernatorial designations, or USEPA approvals. This will only create new layers of oversight and second guessing. USEPA intrusion into State water management (e.g. surface and groundwater/quality and quantity) is inappropriate. Again, in order for States to accomplish what S. 1114 envisions, they need support encouragement, incentives and the elimination of bureaucratic barriers. The flexibility S. 1114 provides on permit terms is, for example, a very helpful move in that direction.

Mr. Chairman, we in the States commend you and your fine Staff for creating this informal forum for discussion of the watershed philosophy. We encourage you to remember that our mutual goal is the creation of a more effective Clean Water Act implementation process. If all we are about is design and implementation of yet another bureaucratic procedure of Federal command and control, this goal will remain unmet.

Again thank you for including our Association in this series of Clean Water Act Reauthorization hearings.



WRITTEN STATEMENT
OF THE
CHEMICAL MANUFACTURERS ASSOCIATION
BEFORE THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE
UNITED STATES SENATE
REGARDING
S. 1114 - THE WATER POLLUTION PREVENTION AND CONTROL ACT OF 1993

AUGUST 16, 1993

EXECUTIVE SUMMARY

The Clean Water Act's controls on industrial point source discharges have been successful and will ensure continuing improvements to water quality. The additional requirements in S. 1114 imposed to control toxic pollutants from industrial point sources, however, will not produce significant reductions in risk to human health and the environment. Therefore, CMA does not believe these amendments are necessary or supportable.

Many of S. 1114's proposed changes in the name of pollution prevention are misguided. The bill's effluent guideline provisions and toxic pollutant phase-out provisions, in particular, are wrong approaches to pollution prevention.

Mandating source reduction practices, i.e. changes in production processes, products and raw materials, through the Clean Water Act's effluent guidelines, fails to recognize the complex nature of manufacturing and product development. This requirement would pose a serious threat to the competitiveness of U.S. manufacturing industries. Flexibility is key to effective source reduction because these decisions are extraordinarily site specific. Applying command and control techniques to achieve it will produce negative results. Further, requiring EPA to limit releases to other environmental media, to address "cross media" concerns will produce inconsistent requirements, not effective pollution prevention.

The toxic pollutant phase-out provision in S.1114 would replace EPA's current authority (Section 307(a)) to apply more stringent health-based toxic effluent standards (including prohibitions) for certain toxic pollutants, with a mandate to prohibit the discharge of newly listed pollutants. EPA's determination of which pollutants to list for phase-out would be based solely on a chemical's properties as highly toxic or toxic and highly bioaccumulative. The provision for listing these pollutants requires no demonstration of adverse effects to human health or the environment resulting from the discharge of the substance. A listing determination, then, would result in discharge prohibitions in the absence of a finding of unreasonable risk. Because these, in effect, would result in bans on the use of listed chemicals, they are extreme measures. Current EPA authority to apply more stringent controls is adequate and more appropriately balanced.

Voluntary pollution prevention planning is the most effective approach to achieving pollution prevention. However, the planning provision in this bill falls short. Its narrow definition of pollution prevention as reductions in use and byproduct generation and in-process recycling is overly restrictive. Its single media focus and its tie-in to NPDES permits are two other deficiencies that require correction.

CMA has a number of other concerns with this bill beyond these pollution prevention provisions. The bill's permit fee and effluent guideline fee provisions, for example, are inappropriate. While CMA supports permit fees to fund administration of the NPDES permit program, targeting these fees for other purposes is to ask permittees to pay for more than their fair share of the water program. The effluent guideline fee provision would give EPA a blank check to spend industry's money for developing guidelines and standards. There are no cost control/accountability mechanisms in either fee provision in this bill.

There is no rational reason for eliminating the Best Conventional Technology standards for conventional pollutants and its cost test. Current removal levels of conventional pollutants approaches 95% or more in most industries. The cost test correctly recognizes that pollution control costs steeply increase as pollutant removals reach these higher levels. The test ensures that additional controls be cost justified. Removing this test will promote technology for technology's sake, without any commensurate benefit to the environment.

The additional enforcement provisions in this bill are unnecessary. There is no need to expand citizen suit enforcement, no need to add natural resource damage authority to the Clean Water Act, and no need to impose multiple penalties as a result of single operational upsets. In addition, the Act currently provides for disqualification from government contracts in appropriate circumstances. To expand the contract bar to facilities that aren't "bad actors" is grossly unfair. Other unnecessary enforcement provisions in the bill are the field citation authority, the increase to the administrative penalty amounts, and the dictating of administrative penalty levels for the states.

Among CMA's other concerns with this bill are: the proposed changes to the domestic sewage exclusion; the presumptive applicability of federal water quality criteria as state water quality standards; the scheduled promulgation of sediment criteria before the science is fully developed; the designation of all waters as fishable/swimmable; the FIFRA and TSCA data requirements; the equivalence of pretreatment standards with BAT standards; the prohibition on control measures under effluent guidelines, NSPS, and pretreatment standards; the definition of new sources; and the compliance schedule amendment.

I. Introduction

The Chemical Manufacturers Association is pleased to submit this written statement on S. 1114, the Water Pollution Prevention and Control Act of 1993. CMA is a nonprofit trade association whose member companies represent more than 90 percent of the productive capacity of basic industrial chemicals in the United States. The chemical industry provides 1.1 million high technology, high wage jobs for American workers and consistently maintains positive trade balances. CMA's members are directly and significantly affected by the requirements of the Clean Water Act.

Two years ago, CMA testified before the Senate Environment and Public Works Committee on S.1081, the Water Pollution Prevention and Control Act of 1991. CMA is pleased to note that many of the concerns that we raised about S.1081 have been addressed in S. 1114. Overall, CMA believes that S. 1114 represents a more balanced approach for Clean Water Act reauthorization than S.1081. In particular, we commend the authors for including legislation that addresses watershed planning, nonpoint source pollution, and municipal pollution. Clearly, these areas provide the most significant opportunities for improving water quality and, therefore, should be the focal point of Clean Water Act reauthorization.

Nonetheless, we continue to have significant concerns about many of the S. 1114 provisions on toxic pollution, permitting and enforcement. We expressed some of our concerns about the toxic provisions in testimony we presented to the Senate Clean Water, Fisheries and Wildlife Subcommittee on July 1, 1993. Additional concerns about the enforcement provisions were highlighted in the statement we submitted to the Subcommittee for the record on the July 27, 1993 hearing on enforcement. These concerns, and others, are described in more detail below.

In general, CMA questions the need for Congress to enact extensive new requirements for industry. According to EPA, regulatory controls

on industrial point sources have succeeded in achieving large reductions in pollutants discharged to waters of the United States. When the Clean Water Act was first enacted in 1972, industrial discharges were considered a major cause of water quality impairment. Two years ago when CMA testified before the Senate Environment and Public Works Committee, we quoted EPA's National Water Quality Inventory -- 1988 Report to Congress -- to the effect that less than 15 percent of the remaining water quality problems could be attributed to industrial discharges. In EPA's 1990 Report to Congress, the data are even better: less than 10 percent of the remaining water quality problems were attributed to industrial discharges.

While it would be wrong for industry to use these statistics to claim its work is done, CMA believes it is appropriate to cite these data to support our belief that the Clean Water Act controls on industrial discharges have been successful and will ensure continuing improvements to water quality. The trend revealed by these data do not suggest that more controls on industrial discharges are needed. Instead, they suggest that existing controls on industry are effecting continuing improvements.

In light of these data, we question whether the additional requirements on industry that are proposed in S. 1114 will produce significant reductions in risk to human health and the environment. Likewise, we question whether these requirements will produce environmental benefits worth the cost or whether they will simply disrupt the current regulatory scheme. Finally, we strongly question whether our nation's increasingly limited resources could be better spent on other water quality and environmental problems where the risks are more significant.

As this subcommittee considers revisions to S. 1114, CMA urges it to focus its reauthorization efforts on the remaining significant water quality problems. It is our view that layering more regulation on the industrial community would produce little if any significant environmental benefit.

Following are CMA's specific comments and recommendations on selected provisions in S. 1114 which are of major concern to our industry.

II. Effluent Guidelines (Section 201)

A. Mandating Source Reduction Practices Through Effluent Guidelines Is An Inflexible, Ineffective Approach To Pollution Prevention

Under the current Clean Water Act, EPA develops technology-based controls that represent the level of pollutant removal, on an industry by industry basis, that the best technology is capable of achieving. In identifying what these best technology-based pollutant removal levels are, EPA considers treatment techniques, process innovations and operating methods. (See Section 304(b) of the Clean Water Act.)

In contrast to this current authority, Sections 201(a), (b) and (c) of S. 1114 would mandate EPA, in its development of BAT standards, New Source Performance Standards, and Pretreatment Standards, to "rely on, and require, to the maximum extent practicable, source reduction measures and practices, including changes in production processes, products and raw materials. . .". This language significantly expands EPA's current authority in developing BAT standards to consider process changes, along with treatment techniques, etc.. It expands EPA's authority by mandating that EPA require process changes, as well as product changes and raw material changes, in any given industry effluent guideline. This drastically changes the current performance-based nature of the effluent guidelines under which EPA can base end of pipe standards on control techniques and process changes but EPA cannot require industry to adopt these controls or process changes to meet these limitations.

This provision is an inefficient, inflexible and inappropriate approach to pollution prevention. By focusing on source reduction practices only, it limits EPA's ability to set standards based on recycling and treatment techniques. Its focus on source reduction also wholly disregards the complex nature of manufacturing and product development. There are literally thousands of manufacturing processes in use in American industry today. The chemical industry alone uses hundreds of unique operations. End-of-pipe standards that require raw material substitution or process modifications cannot adequately

reflect these variables. At a minimum, they would inhibit industry's ongoing development of innovative and cost effective pollution prevention technologies and techniques.

The focus on products and raw materials through the Clean Water Act is unprecedented and would pose a serious threat to the competitiveness of U.S. manufacturing industries. Requiring EPA to require changes in production processes, products and raw materials could result in the discontinued use of effective manufacturing processes, in the phase-out of many beneficial products, and in the significant impairment of the quality of other products. The effect would be minimal environmental protection, but at huge cost and competitive disadvantage to industry generally, as well as a loss of jobs throughout the economy.

While EPA may view this provision as supporting its development of effluent guidelines for establishment of "in-plant" limits, this provision goes well beyond what authority EPA might need in that regard. This language creates a mandate for source reduction effluent guidelines. If EPA doesn't follow this mandate in its development of effluent guidelines for all industries, EPA will be sued to do so because EPA does not have discretion to apply this requirement only "as appropriate".

Attempting to force-fit source reduction into the effluent guidelines process is a mismatch. Flexibility is crucial to effective source reduction because source reductions decisions are not, and cannot be made to be, "one size fits all". The extraordinary variety and complexity of manufacturing processes and products should suggest that an across the board attempt to force a single process, product or raw material change on an industry will have disastrous effects. Changes to processes, products and raw materials are extraordinarily site specific.

Industry already recognizes the bottom-line intelligence of pollution prevention. Industry already analyzes its processes, raw

materials and products to determine how best to prevent pollution in order to meet CWA effluent limits. It invests much time and money to do so. In this process, industry also considers the viability of recycling techniques and upgrades to treatment as a means of preventing pollution. All of these pollution prevention decisions are constrained by technological feasibility, economics, and product quality. Decisions about source reduction practices are particularly site specific. Even simple changes in the suppliers of raw materials require detailed evaluations of the material's effects through all the process steps and downstream markets. Process and product changes also raise the question of the interrelationship with other product control laws (e.g., FIFRA and TSCA). In short, pollution prevention decisions are not simple determinations that EPA can make effectively for industries through the Clean Water Act's effluent guidelines.

Further, the EPA resources required to develop these standards would be considerable. Development of industry-by-industry end-of-pipe standards that could even moderately reflect, much less require, best available production processes, products and raw materials within industries, would be prohibitively resource intensive given the enormous complexities involved.

Rather than trying to force-fit source reduction concepts into the effluent guideline process, Congress should develop incentives to further encourage industry to perform pollution prevention analyses that include source reduction. Planning for pollution prevention, under the public eye, is a more effective approach to promoting pollution prevention than having EPA try to command and control it on a single media basis. Public pressure would encourage pollution prevention. In contrast, pollution prevention "standards" would stifle innovation and thus discourage pollution prevention.

B. Mandating Establishment Of Cross-Media Standards Under The Clean Water Act Will Produce Inconsistent Requirements

In developing technology-based controls for direct dischargers under the CWA, EPA must specify certain factors to be "taken into account" in determining the best technology for achieving pollutant removal. Among the factors that EPA must consider are a technology's "non-water quality environmental impact". Under current law, therefore, EPA can select one technology as BAT on the basis that another technology creates too much "non water quality environmental impact." Impacts on other environmental media, therefore, are factored into EPA's assessment of the best control practices when developing the technology-based effluent guidelines for an industry.

Section 201(a), (b) and (c) of this bill would require that BAT standards, new source performance standards and pretreatment standards "prohibit or limit" the release of pollutants to other environmental media, including ground water. This provision converts EPA's current authority to consider cross media impacts into a mandatory requirement to establish CWA effluent guidelines for releases to air, land and ground water.

This amendment attempts to force-fit cross-media concerns into the Clean Water Act's effluent guideline process without any thought about the effect of such a requirement on other program requirements that regulate these other media. For example, the Clean Air Act and RCRA are specifically tailored to address and control releases to air, land and ground water. The criteria that drive EPA's development of technology-based standards under these other statutes are not identical to the criteria that drive EPA's development of CWA effluent guidelines. The creation of cross-media based effluent guidelines, therefore, could produce CWA requirements that prove inconsistent with the requirements of these other single media statutes. The result would first be confusion about which standard controls, followed by litigation, followed by a unsatisfactory band-aid solution. Trying to

convert already complex single media statutes into cross media statutes through this simple legislative "fix" is unworkable.

Further, this amendment is not necessary. EPA is embarking administratively in the direction of cross media considerations through its new cluster approach to regulation. EPA is reviewing and revising in concert the requirements imposed on specific industries by the single media statutes. It is doing this without creating new, potentially inconsistent multi-media standards.

In addition, this provision's specific call for effluent guidelines for ground water (coupled with other provisions in the bill for federal ground water criteria and presumptive applicability of federal criteria as state water quality standards) raises serious concerns about federal usurpation of states' primary authority to protect ground water resources. When Congress first considered the Clean Water Act in the early 1970's, several bills provided authority to establish federal standards for ground water. Congress rejected this notion, however, because of the complexity and variety of the states' jurisdiction regarding ground water. Primary jurisdiction over ground water quality and quantity has resided with the states and should continue to reside with the states because ground water resources vary significantly in quality, quantity, ease of obtaining and potential for contamination according to hydrogeologic conditions that vary across the country. State standards can more appropriately reflect these variations in local conditions and use patterns than federal standards could do.

C. Prohibitions On Control Measures Would Discourage Innovation

Under the current CWA, industry is not required to use the control technology identified by EPA as best available technology (BAT), as long as it meets the effluent standard that's based on BAT. Similarly, industry is not prohibited from using specific control technologies. The performance based approach of the effluent guidelines encourages

the development of new treatment technologies and innovative, less costly approaches to pollution prevention.

In response to some claims that certain control technologies have created cross media problems, Section 201 of this bill would give EPA authority to prohibit industry's use of certain technologies in meeting CWA standards where these technologies are determined to have an adverse impact on any environmental medium.

While the intention of this provision -- to avoid creation of cross media problems -- is sound, it is not worth the price that would have to be paid in terms of industry innovation. This amendment would have a chilling effect on development of innovative pollution prevention technologies.

If cross-media transfers are a problem, other environmental statutes should be used to control these other releases. To this end, EPA's cluster approach to regulation, again, should be helpful. Other recent developments in environmental regulation -- e.g., reporting requirements under EPCRA Section 313 -- are also discouraging cross media transfers. Congress should consider these other factors before taking this drastic approach to addressing cross-media concerns.

D. Elimination Of BCT And The Cost Test In Development Of Standards For Conventional Pollutants Will Promote Technology For Technology's Sake Without Any Rational Relationship To Environmental Benefits

The current Act applies a "cost reasonableness" test to the development of Best Conventional Technology (BCT) standards for conventional pollutants. S. 1114 eliminates the differentiation of treatment standards between conventional and toxic pollutants -- applying Best Available Technology standards to both -- and with this change, removes the BCT cost reasonableness test. This is inappropriate.

When Congress reviewed the Clean Water Act in 1977, it was presented with substantial evidence that compliance with BPT limits by

1977 had been very effective in treating conventional pollutants such as BOD and suspended solids. It was Congress' judgment that, from that point forward, additional investment in conventional pollutant control would have to be cost justified. Congress therefore adopted in 1977 the BCT level of pollution control technology which included a cost test. This cost test was developed in recognition of the fact that pollution control costs steeply increase as pollutant removals reach higher levels. Under BCT, additional controls on conventional pollutants beyond BPT could be imposed only to the extent that the increased cost of treatment would be reasonable in terms of the degree of environmental benefits.

Removing the BCT standard, and with it its cost test, makes no sense when conventional pollutant removal levels in most industries now approach 95% or above. This amendment promotes technology for technology's sake, without any rational relationship to the environmental benefits that will accrue. Therefore, this amendment should be eliminated.

E. Pretreatment Standards Equivalent To Direct Dischargers' Standards Ignores Congress' Concerns About Redundant Treatment

Section 201(c) of this bill requires that pretreatment standards be "no less stringent than any effluent guideline" for the same source category under Section 304(b) of the CWA. This amendment effectively imposes the same standards for indirect dischargers as for direct dischargers. The impact of this amendment is that industrial users of POTWs would be forced to install unnecessary, redundant treatment in order to meet pretreatment standards that are as stringent as direct discharge standards.

This amendment contrasts sharply with Congress' original intentions with respect to pretreatment standards. Under currently developed pretreatment standards, pollutants are treated twice, first by industry and then by a POTW which must comply with its permit. EPA's pretreatment standards are technology-based requirements based on the best available technology for specific industry categories. Congress

never intended these standards to require redundant treatment by industry. The legislative history of Section 307(b) of the Act makes it clear that pretreatment was not intended to be required as a substitute for adequate treatment by municipal waste treatment works. Under Section 307(b)(1) of the Act, EPA may only require pretreatment "for those pollutants which are determined not to be susceptible to treatment by POTWs or which would interfere with the operation of such treatment works." EPA makes determinations of whether pollutants are "incompatible" with POTWs based on criteria of interference, pass through, sludge contamination or other incompatible effects. In sum, Congress' intent was that the treatment capability and performance of the POTW be recognized and taken into account in establishing pretreatment standards.

This amendment ignores Congress' concerns about redundant treatment. This amendment is based on the erroneous premise that POTWs are not capable of effectively treating industrial effluent. In fact, POTWs use the same treatment technology as industrial wastewater treatment plants, and in many cases, POTWs were specifically designed and built to handle industrial wastewater. POTWs can and do provide effective treatment of conventional, non-conventional and toxic pollutants in industrial wastewater. Where a POTW is unable to handle specific industrial wastewaters, the POTW has authority to require their industrial users to meet local limits to enable the POTW to effectively treat those wastewaters. Any isolated examples of POTWs ill-equipped to handle industrial wastewater should not be used to justify making pretreatment standards for indirect dischargers equivalent to BAT standards for direct dischargers.

Proponents of this provision also argue that a significant portion of industrial wastewater that is sent to POTWs is released to the environment due to losses from leaking sewer lines. This claim is unsubstantiated. In fact, operators report more problems with infiltration into sewer lines than with exfiltration.

It was economies of scale that first brought about the idea of industries using POTWs to treat some of their wastewaters. In fact, industry helped fund the construction of many POTWs around the country and provides a significant source of revenue for POTW operation in many locations. If indirect dischargers are now required to meet the same standards that direct dischargers must meet, the advantages of these economies of scale will be greatly reduced. Additional, costly and redundant treatment will be required for no environmental benefit. Many indirect dischargers will seriously question the continuation of any tie-in to POTWS. Because industries that discharge to POTWS pay large user fees to these POTWS, another impact of this amendment could be a significant loss of revenue for the POTWS.

In sum, this amendment is unnecessary and will result in only significant increased costs for no environmental benefit.

F. S. 1114 Would Give EPA A Blank Check To Spend Industry's Money On Development Of Effluent Guidelines And Standards

Under the current Clean Water Act, EPA is required to develop effluent guidelines, new source performance standards, and pretreatment standards for categories of sources. Government funding is used to pay for these standard setting activities.

Under S. 1114, EPA would be required to determine the cost to the Agency of developing effluent guidelines, new source performance standards, and pretreatment standards. EPA would further be required to collect fees from facilities that are regulated under these guidelines and standards to offset the full costs of their development. Waivers would be available for small businesses or facilities for which fees would pose an unreasonable financial hardship. Fees may also be modified for facilities that demonstrate new or innovative technology.

Industry should not have to pay for development of guidelines or standards. That is properly a government funded function.

S. 1114 would give EPA a blank check to spend industry's money for developing guidelines and standards. There is no cost control mechanism under this provision. There would be no incentive for the Agency to be cost-effective in the development of guidelines and standards since they would be authorized to offset their full cost through collection of fees from industry. The cost burden would be particularly high on industrial users of POTWs since their individual discharges are relatively small while the cost of standard development is high. For all of these reasons, the effluent guidelines fee provision should be dropped.

G. Other Provisions In Section 201 Of S. 1114 Are Unnecessary And Should Be Dropped

1. New Source Definition

The revision to the effective date of New Source Performance Standards at Section 201(b)(2) of the bill is unnecessary. Under the current CWA regulations, a new source is defined as any source the construction of which begins either after the promulgation of a new source performance standard, or after proposal of such a standard, if the standard is subsequently promulgated within 120 days of its proposal in accordance with Section 306 of the Act. This regulation is reasonable and was upheld by the D.C. Circuit.

S. 1114's requirement that new source performance standards (NSPS) become effective on the date of proposal of the standard will create absurd results. For example, under this language, an organic chemicals plant which began construction in 1983 would have been subject to the NSPS under the OCPSF effluent guidelines that weren't promulgated until November 1987, more than four years later. While the intention of this amendment is grounded in the fear that industries will run out to build facilities as soon as NSPS are proposed so as to avoid their applicability, this has not been common practice. Further, applying proposed New Source Performance Standards that may be changed in the final rule (typically promulgated years later), is simply inequitable.

2. Compliance Schedules

The conforming amendment in Section 201(d)(1)(B) appears to preclude a compliance schedule for new water quality-based pollutant limitations if the permit already includes a limitation for those pollutants. This amendment is unnecessarily restrictive because it prohibits EPA from allowing reasonable opportunities to attain compliance where it is appropriate. Requiring newly negotiated water quality-based permit limits to become effective immediately, without allowing any time for compliance, is unrealistic. It fails to recognize that water quality-based permit limits are by definition more stringent than the technology-based limits that may have previously applied to these same pollutants. If the Clean Water Act's 1977 statutory deadlines for compliance with more stringent water quality based limits is what's prompting this amendment, this deadline should be changed to recognize the need for reasonable compliance schedules for new permit limits, whether based on new effluent guidelines or water quality standards.

III. Water Quality Criteria and Standards (Section 202)A. S. 1114 Would Shift Too Much Authority Away From The States To EPA For Setting Water Quality Standards

Under Section 303(c) of the current Clean Water Act, States are required to adopt water quality standards for waters in their State. These water quality standards consist of two elements: 1) a designated use or uses for each water body, e.g., public water supply, recreation, propagation of fish and wildlife; and 2) criteria necessary to protect the designated uses. State programs also contain antidegradation policies and specific implementation procedures to maintain and protect water quality.

States must adopt water quality standards for all priority pollutants, the discharge or presence of which "could reasonably be expected to interfere with" designated uses in the State. EPA's role is to develop water quality criteria for use by the States in developing their standards and to review State standards to determine if they meet requirements of the Clean Water Act. Section 303(c)(4) of the Clean Water Act grants authority to EPA to propose and promulgate water quality standards for a State if it finds that a standard developed by the State does not meet the applicable requirements of the Clean Water Act or at any other time when it determines that a standard is necessary.

Under the approach proposed in S. 1114, all waters for which a use has not been designated by a State would automatically be designated as fishable and swimmable. Further, S. 1114 provides that any water quality criterion published by EPA is to apply automatically to a State unless the State objects within 120 days and subsequently adopts its own criterion within 3 years. Finally, S. 1114 authorizes EPA to promulgate and implement an antidegradation policy and implementation procedures for States without an approved policy and procedures.

The provisions in S. 1114 would shift too much authority away from the States to EPA in setting water quality standards. Because States

can take into account local characteristics and uses (existing and future) of the water body, they are in the best position to determine appropriate designated uses for water bodies within their boundaries. Likewise, States are the appropriate government body to determine when water quality criteria are needed to support designated uses within the State. And, States should be allowed to adopt antidegradation policies and implementation procedures that meet the individual needs of that State.

For these reasons, States should be given ample opportunity to set all elements of their water quality programs for waters within their State. EPA should be allowed to set water quality standards for States only after States have had adequate opportunity to adopt their own standards. The current Clean Water Act recognizes this need. It provides EPA authority to impose water quality standards when State standards do not meet the requirements of the Clean Water Act or at any other time that a standard is necessary. This authority is sufficient to allow EPA to set water quality standards for a State, when necessary.

1. Use designations

S. 1114 provides that "all waters of the United States for which a use has not been designated shall be deemed to be designated as fishable and swimmable, unless a State establishes an alternative use for the waters." This automatic classification would take effect within 5 years of enactment.

The current Clean Water Act correctly recognizes other beneficial uses such as agricultural, industrial, and navigation. EPA's own regulations (40 CFR Part 131) stress the need for States to designate uses that are attainable. In some cases, a designated use of fishable/swimmable will simply be unattainable, due to natural background conditions or other factors. The approach in S. 1114 disregards this fact. In the event that EPA must establish use designations for a water in a State, it should also consider whether a

particular use designation is attainable. The automatic presumption that all unclassified waters can attain a use designation of fishable/swimmable in S. 1114 is therefore inappropriate.

2. Water quality criteria

Under S. 1114, each Federal water quality criterion that is published will become automatically a State criterion after only 120 days. S. 1114 would allow a State to object to this automatic application of the Federal criterion only if the State makes this objection within the 120 days and subsequently adopts its own criterion within 3 years.

This approach represents a major shift in current policy under which States have primary authority for adopting water quality criteria. Under the approach, States would have only limited discretion in adopting water quality criteria for the waters within its State. Section 303(c)(2)(B) of the Clean Water Act requires States to adopt criteria for toxic pollutants, "the discharge or presence of which . . . could reasonably be expected to interfere with designated uses" The approach in S. 1114 would skip this determination altogether, by making Federal criteria the presumptive State criteria regardless of whether a pollutant can reasonably be expected to interfere with designated uses in a particular State. States would have no opportunity to determine that a criterion is not needed in its State and only limited opportunity to determine if a different criterion than the Federal criterion would be more appropriate for the waters in its State. Furthermore, once a Federal criterion is automatically applied to a State (after 120 days), S. 1114 would provide no mechanism for a State to adopt its own criterion or modify the criterion at a later date.

Imposing Federal water quality criteria on States in this way will significantly restrict the ability of State permit writers to take into account local, site-specific conditions when developing water quality based permit limits. This is an important feature of many current

State water quality standards programs which should be retained and encouraged. By taking into account local, site-specific conditions, water quality based permit limits can be established for NPDES permittees that are protective of human health and aquatic life for a given location, without being unnecessarily overly protective.

3. Antidegradation Policy and Implementation Procedures

EPA regulations (40 CFR 131) require States to adopt an antidegradation policy and implementation procedures as part of its water quality standards. S. 1114 would codify this requirement. Further, it would provide EPA authority to promulgate an antidegradation policy for States without an approved policy within 3 years of enactment of S. 1114.

States should be given ample opportunity to develop and implement their own antidegradation policies. These policies specify how a State considers social and economic impacts in decisions to permit new or expanded manufacturing facilities as well as in decisions for outstanding natural resource water designations. Clearly, policies for these important considerations are most appropriately developed and implemented at the State level. Giving EPA authority to impose these considerations on States without their participation would be inappropriate.

In summary, the provisions in S. 1114 described above are not only inappropriate, they are unnecessary. Under the current Clean Water Act, EPA already has ample authority to establish water quality standards for States when EPA determines that standards are necessary in a State. EPA recently exercised this authority under the National Toxics Rule (57 Fed.Reg. 60848, Dec. 22, 1992).

B. Requirements In S. 1114 For EPA To Develop A Minimum Of 8 Sediment Criteria Within 4 Years Is Impractical And Contrary To Sound Science

Under the current Clean Water Act, EPA has authority to publish criteria for water quality including information on factors necessary to restore and maintain the chemical, physical, and biological integrity of surface waters. EPA has used this authority to begin work on the development of sediment quality criteria for a limited number of specific chemical substances. Possible applications of these criteria are expected to include NPDES discharge limits, waste site remediation projects, and product safety determinations.

S. 1114 would establish a new focus on sediment quality in the water quality standards section of the Act. It would require EPA to develop a plan for publishing no fewer than 8 sediment quality criteria (including PCBs and dioxin). EPA would decide which substances needed criteria developed on the basis of greatest benefit to human health or the environment.

S. 1114's focus on enhancement of sediment quality through the Clean Water Act's water quality standard program is premature. Sediment contamination is largely a "hot spot" occurrence only affecting certain limited geographical areas due to past spills or discharge practices. Existing methods of assessing exposure and ecosystem effects are adequate to assess any needed remediation goals. Because sediment contamination is only a hotspot problem, not a national problem, federal sediment quality criteria are not needed.

Further, present methods being developed by EPA for deriving sediment quality criteria have too much uncertainty associated with them to be incorporated into State water quality standards, wastewater discharge permits, or waste site remediation standards. Until methods for developing sediment criteria can be proven through peer-reviewed field validation studies, their use should be limited to screening and

setting priorities about where additional investigatory efforts are needed.

While EPA has begun work on developing sediment quality criteria methodologies for selected non-ionic organic compounds, work on developing methodologies for other types of compounds is still in the infancy stage. These methodologies must be developed and proven before EPA can satisfy a requirement to develop sediment quality criteria for many compounds, including PCBs and dioxin. This will take much longer than 4 years.

In summary, the provision in S. 1114 requiring EPA to develop a minimum of 8 sediment quality in 4 years is premature and unrealistic given the localized nature of sediment contamination and the scientific limitations in the present methodologies for assessing sediment contamination.

C. S. 1114 Would Impose Costly New Data Requirements Pursuant to FIFRA And TSCA

The current Clean Water Act directs EPA to develop water quality criteria as necessary to restore and maintain the chemical, physical, and biological integrity of water and to protect and provide for propagation of fish and wildlife and allow for recreational activities in water. Consequently, EPA has broad authority to develop water quality criteria for a wide range of substances.

Under S. 1114, a manufacturer of a pesticide would be required to provide information sufficient to develop a criterion for that pesticide as part of the FIFRA registration process. Similarly, a manufacturer of a chemical substance that is subject to premanufacture notice pursuant to Section 5 of TSCA would be required to provide information sufficient to develop a criterion, unless the substance fall into one of two limited exclusions.

These additional data requirements are inappropriate for several reasons. Currently, thousands of new pesticides and chemical

substances are subject to FIFRA registration or TSCA premanufacture notice each year. Many of these chemicals will cause no impact on water, because of the nature of the compound, e.g., they hydrolyze in water, are insoluble in water, etc., or because their use will not result in discharges to water. The exclusions provided in this bill inadequately address these situations. Further when new substances are developed, it may not be known whether they fall into one of these exclusions. Requiring manufacturers of all new pesticides and chemical substances -- except those substances meeting these limited exceptions -- to provide information to develop water quality criteria will impose a significant burden without any environmental benefit.

Current methods for development of criteria for protection of human health and aquatic life require considerable data. This is both necessary and appropriate to ensure that the criteria and resulting water quality based permit limits are based on sound science. Requiring manufacturers to conduct these costly studies as part of the FIFRA registration process or TSCA premanufacture notice regardless of whether these substances have the potential to result in water quality impacts is unjustified.

The additional data requirements will add further cost and delay to the FIFRA registration process and TSCA premanufacture notice process. Data requirements under the current TSCA premanufacture notice process, for example, are intentionally streamlined to prevent unnecessary delays in developing new chemicals.

Requiring manufacturers to develop these data for new pesticides and for new chemical substances will impose significant new costs. It will result in the generation of information for thousands of new chemicals, regardless of whether water quality criteria are needed for those substances. In addition, it is highly unlikely that EPA and the States will be able to incorporate this significant increase in information in their already resource-constrained water quality programs. As a result, manufacturers will be required to spend

millions of dollars to generate information that is not needed or ever used.

IV. Toxic Pollutant Phase-Out (Section 203)A. The Discharge Prohibition Provision In S. 1114 Will Result In Bans On Uses Of Beneficial Substances Absent Any Demonstration Of Unreasonable Risk

CMA believes that controls on pollutants that have an adverse effect on human health or the environment are warranted. However, discharge prohibitions are environment management controls that should be applied judiciously because their impact is so extreme -- they typically result in bans on the use of the targeted substance, witness DDT and PCBs.

Under Section 307(a) of the Clean Water Act, EPA already has authority to prohibit the discharges of toxic pollutants. To assert this regulatory authority, EPA must take into account a pollutant's toxicity, persistence, degradability, presence of affected organisms, effect of toxics on the organisms and the extent to which effective control is already being achieved through other regulatory authority. EPA has exercised this authority with respect to six pollutants: DDT, PCBs, aldrin/dieldrin, endrin, toxaphene and benzidine.

Section 203 of S. 1114 would replace this authority with a mandate for EPA to list "highly toxic or toxic and highly bioaccumulative pollutants" and then to ban the discharge of these listed pollutants by regulation. This provision is misguided for several reasons.

First, it applies a simplistic listing process to the determination of which pollutants must be subject to discharge prohibitions. This listing process includes no discernible criteria by which EPA identifies which pollutants are "highly toxic" or "toxic and highly bioaccumulative." This is wholly inappropriate given the extreme impacts of discharge prohibitions described above. While Congress should not legislate arbitrary standards for identifying these pollutants, a description of appropriate factors to take into account or demonstrations that EPA must make in any identifications would be

appropriate. For example, the provision fails to require any demonstration by EPA of a relationship between the discharge of the identified pollutant and unreasonable risk to human health/environment. It erroneously assumes that a discharged substance identified as highly toxic or toxic and highly bioaccumulative poses an unreasonable risk. Merely because a pollutant is toxic and bioaccumulative does not mean its discharge in any amount poses a threat to human health and the environment. EPA's determination to list a substance for discharge prohibitions must be based on a determination of adverse effect to human health or the environment from the discharge of the substance.

This provision replaces EPA's current authority to prohibit discharges with a mandate to prohibit discharges of listed pollutants. Although the bill includes limited exemptions from the prohibitions or extensions to compliance periods, these provisions are insufficient because the listing process is flawed from the outset. It fails to require EPA to consider either the societal or economic impacts of a decision to list a substance for discharge prohibition. For example, there's no requirement that EPA consider the benefits of the identified substance, the impact of its prohibition on product quality, or the availability of effective and safe substitutes.

Given the potentially extreme impacts of discharge prohibitions, another significant concern is that there is no provision for scientific peer review of either EPA's methodology for identifying pollutants for phase-out or of the listed pollutants themselves. Public review and comment on EPA's methodology for listing and any lists should also be required.

Citizen petitions for listing pollutants for prohibitions are inappropriate, particularly in the absence of any criteria by which pollutants would be identified for prohibition. The expedited listing process is also misguided because it would allow for snap decisions that could later prove incorrect. The Clean Water Act's antibacksliding provision could prevent correction of these errors. Devastating

consequences could result in affected industries, similar to those felt by apple growers as a result of the media scare about Alar in 1989. Discharge prohibition decisions must be deliberate and well considered. Citizen petitions and expedited listing processes associated with these will not promote rational decision-making.

Finally, Congress should consider the appropriateness of risk management options other than discharge bans for controlling pollutants, similar to the approach that is authorized under Section 6 of TSCA. There, when EPA determines that a substance presents or will present an unreasonable risk of injury to health or the environment, EPA is authorized to take a variety of actions, including prohibitions. The appropriate risk management action is determined only after EPA makes a balanced evaluation of the health and environmental effects and magnitude of human/environmental exposure to a chemical, the benefits of the chemical for various uses, the availability of substitutes for such uses, and the reasonable ascertainable economic consequences of the Agency's action.

In sum, this provision's mandate for EPA to list and prohibit discharges of listed pollutants is ill considered. Current EPA authority is adequate. This provision should be struck from S. 1114.

B. Review Of Priority Pollutant List Is Not Needed (Section 203(b))

Another unnecessary amendment in this bill is the requirement that EPA review and revise the priority pollutant list every five years. This requirement imposes an additional resource drain on EPA for little if any environmental benefit. EPA testified on July 1 that this authority was not needed, because EPA had no difficulty regulating pollutants that were not on the priority pollutant list. Mandating an evergreen listing process would simply take EPA's limited resources away from water quality problems of more significant concern.

V. Pretreatment Program (Section 204)A. The Proposed Changes To The Domestic Sewage Exclusion (Sec. 204(c)) Will Effect Major Disruptions In Industry At Huge Costs For Minimal Environmental Protection

The changes to the domestic sewage exclusion of RCRA, outlined in Section 204(c) of this bill, would severely limit the scope of the DSE. The impact of this limitation would be devastating -- requiring industry to spend hundreds of millions of dollars to segregate wastewaters for offsite treatment or to install redundant treatment. There is no environmental benefit to be gained by requiring these changes. There is no substantiated justification for this amendment. It is contrary to EPA's own conclusion in its 1986 Domestic Sewage Study that the DSE needed no change and that the Clean Water Act, not RCRA, provides the best means to control hazardous waste discharges to POTWs. Since that study was done, EPA promulgated new general pretreatment requirements (July, 1990) that specifically address discharges of hazardous wastes to POTWs. This amendment is unnecessary and should be struck from S. 1114.

Proponents of this amendment claim that the domestic sewage exclusion of RCRA is a loophole through which tons of hazardous waste are discharged by POTWs into waters of the United States untreated. This claim is false. It wholly disregards several factors: (1) that POTWs can and do provide adequate treatment of industrial wastewaters; 2) that industrial users of POTWs must meet both general pretreatment requirements and categorical pretreatment standards before discharging to POTWs; 3) that POTWs can and do apply local limits to wastes discharged to POTWs where needed; and (4) that POTWs treat wastes using the same treatment technology that industrial wastewater treatment plants use, to meet their own permit limits before discharging to waters of the United States. This series of controls provide more than adequate treatment of wastes discharged by POTWs.

Merely because these are Clean Water Act controls does not mean that they are less stringent than RCRA controls. In fact, many

RCRA BDAT standards were developed based on Clean Water Act standards. Any perceived differences in stringencies are merely a function of the different categorization of wastes under the Clean Water Act and RCRA. The Clean Water Act's technology-based standards represent what the best technology can achieve when applied to aggregated waste streams, which may include both hazardous and nonhazardous streams. RCRA's technology-based standards, on the other hand, represent what the best technology can achieve when applied to separate, discrete as-generated hazardous wastestreams. RCRA's BDAT standards were never intended to apply to industrial wastestreams that are discharged to POTWs and which generally consist of a wide-ranging mixture of hazardous and non-hazardous waste. They were designed to force treatment of segregated wastes that were to be disposed of on land. The change proposed to the DSE would mean that unless one of three conditions is met, industry would have to segregate hazardous wastestreams from non-hazardous wastestreams and send the hazardous wastestreams for offsite treatment and disposal or apply redundant treatment measures to these wastestreams. This is contrary to the development of CWA centralized treatment schemes like the POTWs which have proved both efficient at removal of pollutants and cost effective.

Other claims that are propelling this amendment to the domestic sewage exclusion are similarly unsubstantiated. Claims that this change will stop transfers of hazardous waste to POTW sludge are not based in fact. Even if they were, Clean Water Act sludge standards are a more direct way to address any alleged problems that may be present in POTW sludge. Similarly, claims that hazardous waste is "leaking" out of sewage pipes even before the wastes reach the POTWs are unsubstantiated. In fact, in-filtration into sewage pipes is considered a greater problem than ex-filtration. Even if ex-filtration were a serious threat, fixing the pipes would seem to be a more direct and effective solution to the problem. Rather than threatening to disrupt centralized treatment efficiencies under the Clean Water Act through this amendment, Congress should first substantiate any real problems this amendment is supposed to address, and then ask whether

these problems could be addressed more effectively and directly through other means.

Beyond CMA's basic disagreement with the need for these changes to the domestic sewage exclusion, CMA also finds the amendment language extremely confusing. Because the Clean Water Act regulates the discharge of "pollutants", while RCRA regulates "solid wastes," concepts from one statute cannot be readily transferred to another. S. 1114's effort to do so results in a provision that is so confusing it cannot readily be interpreted and applied. For example, a major source of confusion centers around a fundamental question: which of the many "pollutants" in a "solid waste" must be subject to pretreatment standard or local limit in order for the waste to be excluded from the RCRA definition of "solid waste"? Other critical terms in the bill are left undefined, such as what it means to be "in compliance" with a pretreatment standard, and what "source" must be subject to a standard.

Several large gaps also exist in this amendment that should raise some red flags. Specifically, because there is no small-quantity generator cutoff in the amendment, the amendment apparently prohibits the discharge to POTWs of household hazardous wastes unless they are subject to pretreatment standards. Also, there is no provision in the bill for wastes that are newly identified as hazardous under RCRA and for which there are no BDAT or pretreatment standards.

Another concern raised by this amendment relates to the EPA and POTW resources that would be needed to ensure that industry will be able to meet one of the three conditions established in the amendment. This resource problem relates to the fundamental question about which pollutants in solid waste would require a pretreatment standard/local limit under this amendment. While EPA may establish a schedule for promulgating pretreatment standards, it cannot identify which pollutants will be subject to a standard because that decision is made only after EPA studies an industry and determines which pollutants need to be regulated. If EPA is required to establish a standard for every pollutant that may be contained in any hazardous waste that may be

discharged to a POTW, then the process of establishing pretreatment standards will be more protracted and fewer, not more, standards will be set in the near term. The same result would occur with respect to local limits. Further, requiring local limits to be "equivalent" to BDAT raises more than just a resource problem for POTWs but also the question of ability to craft "equivalent" standards.

In sum, this amendment has not been clearly thought out. Neither the problems it aims to solve nor the manner in which it would solve them are at all clear. Congress should defer to EPA's expertise in this matter -- as outlined in the 1986 Domestic Sewage Study -- and keep the domestic sewage exclusion intact.

B. Removal Credits Should Be Granted For Other Mechanisms Besides Biodegradation (Section 204(b))

Section 204(b) of S. 1114 would restrict the availability of removal credits under the pretreatment program. Removal credits would only be allowed for toxic pollutants discharged to POTWs if the treatment by the POTW results in biodegradation of the toxic pollutant.

Biodegradation should not be the only removal mechanism allowed. Provided that the intended uses of POTW sludge are not impacted, mechanisms such as precipitation and adsorption should be considered as well. This amendment, therefore, should be struck from the bill.

VI. Pollution Prevention Planning (Section 205)A. Although Planning Is The Preferred Approach To Pollution Prevention, This Provision Is Deficient

CMA believes that voluntary planning for pollution prevention is the best way to achieve pollution prevention because it is inherently more flexible than any command and control approaches to pollution prevention. From this perspective, therefore, CMA believes that the effluent guideline and toxic discharge prohibition provisions of S. 1114 described above are misguided attempts to inject pollution prevention into the existing Clean Water Act structure.

CMA's endorsement of flexible, voluntary pollution prevention planning is grounded in the fact that voluntary plans can appropriately address the pollution prevention priorities of the facility, as opposed to the priorities established by EPA. Facility-based pollution prevention plans allow priority setting not only with respect to the particular pollutants at a facility but also with respect to the particular environmental exposure of most significance at a facility. This is why multi-media pollution prevention planning is preferable to single media pollution prevention planning. Facilities can set priorities among all their environmental releases to allow focus where the most significant risks lie and where the most significant reductions can be obtained.

CMA believes that voluntary pollution prevention planning which is multi-media and risk-based represents a superior approach for accomplishing S. 1114's objectives of promoting pollution prevention. Other pollution prevention provisions in S. 1114, including revisions to effluent guidelines in Section 201 and prohibitions on toxic discharges in Section 203, are not only misguided, they are unnecessary, if facility-based pollution prevention planning is implemented.

The proposed pollution prevention planning provision in S. 1114 approach is deficient in several ways. First, its single media focus

will skew facilities' prioritization of pollution prevention projects to the water media when this may not be where a facility can obtain the most risk reduction.

Second, its tie-in to NPDES permits will give EPA great leverage so that EPA's pollution prevention goals, rather than the facility's, could be incorporated into the plan.

Third, this provision's focus on use reduction, byproduct generation and in-process recycling restrict a facility's pollution prevention practices to the "tip" of the pollution prevention hierarchy. Pollution prevention should be viewed more broadly as any act or practice that reduces the amount or toxicity of toxic chemicals released into the environment or otherwise reduces the hazards to human health or the environment associated with such releases. Pollution prevention incorporates the entire hierarchy of environmental management practices including source reduction, reuse and recycling and other waste minimization techniques. In short, the goal of pollution prevention should be risk reduction, not meeting mandates to do "preferred" environmental management practices. Facilities should be encouraged to "move up" the environmental management hierarchy, but not to the point of ignoring risk reduction opportunities that can be achieved through practices other than source reduction or in-process recycling. As drafted, S. 1114 focuses on the methods of pollution prevention rather than risk reduction goals.

Use reduction goals are one of the minimal requirements of the pollution prevention plans in Section 205. These, in particular, raise serious concerns about the necessary use of certain raw materials in the manufacture of beneficial products; the impacts on product quality, the protection of intellectual property; and the ability of U.S. companies to compete in world markets. Because of these concerns, the requirement for use reduction goals should be struck from this bill.

It is essential that the Subcommittee correct the deficiencies in Section 205. CMA believes voluntary pollution prevention planning is

the appropriate approach to pollution prevention and that Congress should seek ways to encourage pollution prevention planning rather than mandating it. However, if Congress insists on mandating pollution prevention, it should take a flexible planning approach, rather than the command and control approach outlined in Sections 201 and 203 of the bill. Improvements to Section 205 to address the concerns raised above with this planning provision however, are in order.

Further, Congress should consider other incentive-based approaches to pollution prevention. For example, Congress should consider removal of some of the existing barriers to pollution prevention in the CWA, e.g., the restrictive nature of variance provisions like the innovative technology variance and fundamentally different factor variance; and the antibacksliding provision.

On its face, the innovative technology variance provision (Section 301(k)) suggests an approach that would provide an incentive for pollution prevention. However, as discussed elsewhere in these comments, its additional two years compliance time is insufficient. Developing, testing and assuring compliance from innovative production processes or control techniques requires considerably more time than 2 years. Further, requiring there be a determination that the innovative system has the potential for industrywide application limits the usefulness of this provision considerably given the facility specific nature of pollution prevention techniques.

Another provision which EPA has interpreted so rigidly that it affords little flexibility in the requirements of the CWA is the Fundamentally Different Factors (FDF) variance provision. Such a provision, if interpreted more broadly, could provide incentive for facilities to undergo pollution prevention projects by allowing them to obtain a variance from an effluent limitation. However, EPA has granted so few FDFs over the years that it is not viewed as providing any real relief from the technology-based effluent limitations. The result can be, again, to discourage rather than encourage pollution prevention.

Under the Clean Water Act, the antibacksliding provision is perhaps the most inflexible provision in the Act. While the objective of this provision is commendable -- to prevent backsliding from limits that had been achieved and to maintain existing water quality -- arguably this provision can discourage pollution prevention. For example, for a facility to achieve a significant reduction in the amount of one pollutant that it discharges, it may be desirable to substitute a different material in the manufacturing process. Use of this material, however, may result in an insignificant increase in the level of another pollutant in the facility's wastewater. If this slight increase will cause the facility to exceed its discharge limit for that pollutant, then the substitution cannot and will not be made, despite the environmental benefits that would result from the significant reduction in the pollutant for the discharge. The provision that prevents a facility from obtaining a less stringent permit limit is the antibacksliding provision at Section 402(o) of the Act.

As Congress looks for ways to promote pollution prevention in the Clean Water Act, it should address these inherent inflexibilities in the Act that stand in the way of real progress in further reductions of wastes and releases.

VII. Permit Fees (Section 501)A. S. 1114 Would Grant EPA Broad Authority To Collect Fees From Industry To Pay For Agency Activities Not Directly Related To Industrial Discharges

The current Clean Water Act does not require states to collect permit fees from NPDES permit applicants. However, a number of states currently have permit fee programs. The amount of fees collected and the scope of activities for which costs are defrayed by permit fees vary from state to state.

S. 1114 would add a new provision to Section 402 of the CWA that would require States to develop a program to collect fees from NPDES permit holders and industrial users of POTWs. The amount of fees that a State collects must be sufficient to cover not less than 60 percent of the costs of developing and administering point source elements of the State's water quality program as well as the sewage sludge disposal and pretreatment program. EPA would be authorized to establish a Federal permit fee program for states that do not have permitting authority or that do not have EPA-approved permit fee programs.

Permit fees are an appropriate source of revenue for the administration of the Clean Water Act's NPDES permit program. However, targeting permit fees for purposes other than the cost of processing permit applications is unacceptable. To do so is to ask permittees to pay for more than their fair share of the water program.

Under S. 1114, fees from industrial dischargers would be used to cover a very broad range of Agency activities, many of which are not directly related to permitting of industrial discharges or their impacts. Examples of programs that would be funded through this fee on industrial dischargers, but which affect and benefit more than permitted industrial dischargers, include: 1) ambient water quality monitoring; 2) setting of water quality standards; 3) modeling, planning, analyses and demonstrations; 4) preparing and maintaining public information systems; and 5) evaluating the performance of

laboratories. Fees should be provided from general funds for these types of activities because they are not directly related to industrial discharge permitting activities.

Industry has already invested large sums of money to comply with existing regulations and standards. This provision's wording "no less than 60 percent of the cost" allows government to extract most of its funding from industry.

Industry should not pay for development of water quality standards because these standards are based on water bodies and watersheds and not on discharges. Further, these standards will affect more than industrial dischargers under the proposed watershed planning and non-point source requirements of S. 1114.

Any proposed permit fee programs should provide for an audit of use of the funds collected. As drafted, there is no accountability mechanism. There is also no cap on the fee collected from a discharger.

VII. Permit Program Modifications (Section 502)

A. Proposed Permit Program Modifications In S. 1114 Would Discourage Industry From Developing Innovative Processes And Technologies

Section 301(k) of the Clean Water Act authorizes EPA to extend the compliance date for facilities subject to an effluent guideline for up to 2 years if the facility proposes to meet effluent standards-- or achieve significantly greater effluent reduction than is required -- using an innovative production process or an innovative control technology.

S. 1114 would limit the usefulness of the innovative technology variance by allowing additional compliance time to cover only the development and testing of innovative technologies. Section 502(h) would reduce the additional time period for compliance under the Section 301(k) variance from 2 years to 90 days.

The current Clean Water Act's innovative process and control technology variance was intended to provide an incentive to facilities to develop innovative, cost-effective compliance approaches involving process changes or new types of treatment technology. S. 1114 would create a disincentive to innovation since the time period needed to develop, test and comply with innovative process and control technology is significant, particularly when compared to the time period needed to comply with demonstrated treatment technologies. An additional 90 days is wholly inadequate. Reducing the additional time period for compliance from 2 years to 90 days eliminates the usefulness of this variance and will discourage facilities from developing innovative processes or technologies.

Instead of creating disincentives, Congress should look for ways to create incentives to encourage development of innovative compliance approaches. For example, even the current 2 year compliance extension is an insufficient incentive to seek and develop innovative techniques. A five year compliance extension is a more appropriate incentive. Adding compliance extensions or waivers from CWA

limitations for innovative technologies that achieve a net environmental benefit to all media would both encourage innovation while simultaneously promoting pollution prevention.

VIII. Enforcement (Section 503)A. The Clean Water Act Already Includes Ample Enforcement Authority, And Amendments To The Statute Are Neither Necessary Nor Appropriate

According to a recent EPA report, there was more enforcement under the Clean Water Act than under any other environmental statute during fiscal year 1992, and penalties assessed during that year reached record highs. The EPA report dramatically illustrates that effective enforcement of the Act's requirements is taking place, and that no additional enforcement authority is needed. In particular, the report states that:

- 29% of all the civil and administrative penalties EPA collected during fiscal year 1992 resulted from Clean Water Act enforcement;
- there were also more criminal fines assessed under the Clean Water Act - \$39.7 million - than under any other environmental statute; and
- the average judicial penalty under the Clean Water Act rose to a record high of \$456,871.

See Enforcement Accomplishments Report FY 1992 (EPA 230-R-93-001).

This record-breaking enforcement of the Clean Water Act occurred in a year in which EPA's enforcement of all environmental statutes under its jurisdiction also reached record highs. Indeed, in fiscal year 1992 alone, EPA assessed approximately 28% of all of the civil and criminal penalties combined that EPA had assessed in its entire history. These figures, which of course do not reflect any enforcement by states, belie any claim that EPA's enforcement of the Clean Water Act is inadequate, or that the Agency lacks adequate enforcement tools.

Yet, S. 1114 inexplicably proposes significant -- and we believe counter-productive -- amendments to the Clean Water Act's enforcement provisions. Put simply, there is no need for additional enforcement

tools, or for modifications to the Act's enforcement provisions. CMA's specific concerns with the proposals in S. 1114 are discussed below.

B. There Is No Need To Expand Citizen Suit Enforcement

The U.S. Supreme Court held in the landmark Gwaltney decision that citizens could not bring actions under the Clean Water Act based wholly upon past violations which had ceased and which were not likely to recur in the future. S. 1114 would reverse this decision, allowing citizens to bring suits for such past violations even though the environment will not benefit at all. For the reasons discussed below, reversing the Gwaltney decision is both unwarranted and is bad public policy.

First, if the objective of citizen groups is to improve compliance with NPDES permit requirements, rather than simply to fill their own coffers with the award of substantial attorneys fees, then such groups should pursue dischargers who are currently violating the Act; they should not spend time and effort chasing dischargers who have cured any problems that may have existed. After all, the interests of citizens are not impaired when a discharger is in compliance with its permit.

Second, whether a discharger who has come into compliance with its permit should be assessed punitive penalties for wholly past violations is an issue that should be left solely to the discretion of governmental enforcement authorities. Vesting such discretion in governmental authorities, who are publicly accountable, provides some assurance that lawsuits for past violations will only be brought when they involve significant exceedances. Such discretion, which of course is not unique to the area of environmental enforcement, is also essential to ensure that limited resources are not spent addressing alleged violations that are of little or no environmental significance. Similar restraint is not required of citizen plaintiffs, however, who can recover their attorneys' fees and costs in enforcement litigation regardless of the seriousness or significance of the violations at issue. Accordingly, there is no incentive for citizens

to pursue "bad actors," as opposed to "deep pockets," and no safeguards to ensure that citizens suits address truly significant environmental issues that deserve enforcement and judicial attention. Limiting citizen suits to ongoing violations provides at least some assurance that the citizen suit enforcement authority will actually be used to the benefit of the environment, and not abused for the benefit of the citizen groups' lawyers.

Enforcement discretion is also important because of the way in which permit limits are derived. In promulgating technology-based effluent limitations guidelines and in developing permit limits in the absence of guidelines, EPA uses a statistical approach that virtually ensures that some exceedances of permit limits will occur. In particular, EPA establishes daily maximum and monthly average discharge limits based upon concentration levels that, on a statistical basis, the best available technology can achieve 99 and 95 percent of the time, respectively. This methodology thus virtually ensures that dischargers will violate their daily maximum limits 1 percent of the time and their monthly average limits 5 percent of the time. In light of this, it is almost surprising that the record of compliance with Clean Water Act requirements is so high. As Senator Graham stated during a July 1993 hearing on the Act's reauthorization, 87 percent of dischargers are in significant compliance with their permits.

Another reason why enforcement discretion is needed is the nature of the analytical tools that facilities must use to measure compliance with permit limits in the parts-per-billion range. Even state-of-the-art analytical techniques are not capable of precisely measuring pollutant concentrations at these low levels. As a result, there is a range of error associated with each analytical measurement, and some reported "exceedances" of permit limits that are within the range of accuracy of the analytical methods may not be exceedances at all.

What this means is that not all violations of the Act warrant enforcement. This is particularly true with respect to past violations

that are no longer recurring. Prosecutorial discretion, which can only be exercised by governmental enforcement authorities, is therefore essential to ensure that dollars and judicial resources are not wasted needlessly on insignificant problems.

S. 1114 would also amend the Act to allow citizen suits even when a state has exacted an administrative penalty for precisely the same violations. There is simply no justification for this proposal. Under the existing Act, state administrative proceedings only bar citizen suits if the proceedings are conducted under a state law that is comparable to the Clean Water Act. The Act requires public notice of any administrative penalty assessment. Thus, citizen groups have ample opportunity to participate in state administrative proceedings; a group that fails to exercise this right should not be allowed to sit on the sidelines during the state proceedings and then bring a duplicative enforcement action later simply because it is dissatisfied with the penalty that the state imposed.

C. Natural Resource Restoration Should Not Be Part Of Clean Water Act Enforcement

S. 1114 will allow the courts to order dischargers to take whatever action may be necessary, including the restoration of the natural resources damaged or destroyed as a result of the discharger's violation. Such a broad expansion of the Act's enforcement authority is wholly unnecessary and will result in costly, protracted litigation. CMA therefore urges Congress not to adopt this provision, for two reasons.

First, existing law already provides adequate mechanisms to address releases of hazardous substances. For example, Superfund authorizes EPA either to order the remediation of a release or to perform the remediation itself and recover its costs from responsible parties. Superfund also provides for the recovery of natural resource damages caused by such releases. In addition, Section 311 of the Clean Water Act is particularly designed to address spill remediation.

Second, the restoration of natural resources is not a simple or straightforward process; quite to the contrary, it is still very much in the developmental stages with no clear track record as to what is feasible and what is not, what works and what does not. In addition, there has been extensive litigation concerning natural resource damages under Superfund, in spite of the fact that the statute contains detailed provisions concerning the collection of such damages. By contrast, S. 1114 provides no guidance for either the courts or the regulated community as to what is meant by natural resource damage restoration. As a result, it will undoubtedly result in more and more lengthy litigation, for an uncertain environmental benefit. This in turn will consume large amounts of the limited resources of governmental authorities, the judiciary and industry. Accordingly, natural resource restoration should not be added to the Clean Water Act. Where a real problem exists, it can be addressed under Superfund.

D. Dischargers Should Not Face Multiple Penalties As A Result Of A Single Operational Upset

NPDES permits typically contain limits on a dozen or more individual pollutants. Indeed, chemical industry permits may have limits on as many as 60 individual pollutants. As a result, if a treatment plant malfunctions or if there is an upset in the process, a discharger may simultaneously violate several pollutant limits.

In 1987, Congress realized that it was unfair to impose multiple penalties on a discharger if an operational upset resulted in the violation of more than one pollutant limit. Congress therefore provided that, for purposes of administrative, civil and criminal penalties, a single operational upset that leads to simultaneous violations of more than one pollutant parameter shall be treated as a single violation.

Now, inexplicably, Congress has proposed to remove the "single operational upset" provision from the Act. We are aware of no data assembled during the past six years that would support such a reversal in policy.

Penalties under the Act are already high -- up to \$25,000 per day per violation for civil penalties. If Congress repeals the "single operational upset" provision, then a facility that has an upset and, as a result, violates 20 pollutant limits for two days until it can remedy the problem, will face a penalty of \$1 million. This is wholly out of proportion to the nature and duration of the offense.

Congress should therefore adhere to the policy it adopted in 1987 and retain the "single operational upset" provision for administrative, civil and criminal penalties.

E. Contract Bars Should Not Apply To Dischargers Found Liable For Civil Penalties, Or To Other Than The Offending Facility

The existing Clean Water Act prohibits federal agencies from entering into contracts with any person convicted of a criminal offense under the Act if the contract is to be performed at any facility which gave rise to the conviction if the facility is owned by such person. S. 1114 would greatly expand this contract bar to cover any facility owned by a person found guilty of a criminal offense, and to cover persons found liable only for civil penalties. Again, the perceived need for this radical expansion of the contract bar amendment is a complete mystery. Moreover, the proposed amendment is so broad that it unfairly penalizes facilities that have not done anything wrong and persons who did not willfully violate the Act.

For example, if an employee at one of many facilities owned by a company violates company policy and submits a false report to EPA, and the company pleads guilty to a criminal offense, then none of the other facilities owned, leased, operated or supervised by that company may receive any government contract work, even though the other facilities had absolutely nothing to do with the offense. Similarly, under the existing Act a discharger is liable for civil penalties for any violation of its permit, regardless of whether the violation is the result of the facility's negligence. And, as discussed earlier, such exceedances of permit limits will occur because of the way in which EPA and the states derive permit limits. Barring a facility that

experiences such as exceedances, and pays civil penalties, from government contracts is wholly unjustified; payment of the civil penalty alone is more than adequate punishment.

Disqualification from government contracts is an extraordinary sanction; for some it would spell financial ruin. The existing Act already provides for disqualification in appropriate circumstances; to expand the scope of the contract bar to facilities that are not "bad actors" is grossly unfair.

F. Administrative Penalties Provide An Adequate Tool To Address Minor Exceedances; There Is No Need For Field Citation Authority

In 1987, Congress authorized EPA to impose administrative penalties. The administrative penalty authority was intended to provide EPA a quick, easy way to address relatively minor violations of the Act that previously could be prosecuted only in the courts. EPA's recent enforcement report indicates that EPA is making frequent use of its administrative penalty authority. In particular, during fiscal year 1992, administrative penalty cases increased by 56 percent over the 1991 level, and administrative penalties accounted for 22 percent of the total non-criminal penalties EPA collected under the Act. The EPA report also states that "[t]he Office of Enforcement expects that the trend toward greater use of [Administrative Penalty Order] authorities will continue" Notwithstanding the success of the administrative penalty programs, Congress now seeks to add an additional enforcement tool -- field citations. CMA urges Congress not to pile on additional enforcement mechanisms.

As discussed earlier, because of the way in which permit limits are derived, and because of the inability of state-of-the-art analytical tools to measure pollutant concentrations accurately at low levels, minor exceedances of permit limits will occur. It is not appropriate to impose penalties for all of these minor violations. Yet, the authority to issue field citations will encourage precisely this, and will significantly reduce the advantages that careful exercise of enforcement authority brings to enforcement of the Act.

CMA also has concerns about the particular language of the field citation provision. First, S. 1114 provides that field citations may not exceed \$5,000 per day for "each" violation, and may not exceed a total of \$25,000 for "the" violation. Since each daily exceedance is a separate violation, the applicability of the \$25,000 cap for "the" violation is unclear. If notwithstanding our views Congress adopts field citations, then no citation should exceed \$25,000 in total, regardless of how many individual violations are covered. If there are multiple violations and the \$25,000 cap is too low, then use of a field citation is inappropriate.

Also, S. 1114 provides that payment of a field citation is not a defense to further enforcement by EPA or a State. This is unconscionable. A discharger that pays a penalty for a violation should not be subject to further enforcement by EPA, a state, or a citizen group. It is not enough that the amount of any field citation may be taken into account in assessing penalties in a subsequent enforcement action, as S. 1114 proposes.

G. There Is No Need To Modify The Amounts That EPA May Collect As Administrative Penalties

S. 1114 would authorize Tier I administrative penalties up to \$10,000 per day for each violation; the existing statute authorizes a Tier I penalty of up to \$10,000 for each violation. While S. 1114 characterizes this change as a "technical amendment," it plainly is not. Because there is very little in the way of procedural protections for a discharger faced with a proposed Tier I penalty, it is unfair for such penalties to be excessive in amount. The increased penalty proposed by S. 1114 is simply inappropriate in these circumstances.

S. 1114 would also increase the cap on Tier II administrative penalties from \$125,000 to \$200,000. While there are more procedural protections associated with a Tier II penalty, the purpose of administrative penalties was to provide a quick, easy way to address relatively minor violations. Penalties up to \$200,000 are not minor.

At that level, dischargers may be inclined to take advantage of the various opportunities to challenge the penalties, frustrating the very rationale for such penalties. Accordingly, Congress should not increase the cap on Tier II administrative penalties.

H. Congress Should Not Dictate Administrative Penalty Levels For The States

S. 1114 would require states to demonstrate the authority to recover an administrative penalty in a maximum amount of not less than \$10,000 per day in order for the state to demonstrate adequate authority to enforce the Act. Unlike federal administrative penalties, which are currently capped at \$25,000 and \$125,000 for Tier I and Tier II penalties, respectively, S. 1114 does not include an overall cap on the state administrative penalty authority. What this means is that states must demonstrate that they have more administrative penalty authority than Congress has seen fit to give to EPA. This will be true even if Congress increases the Tier II cap from \$125,000 to \$200,000 since the caps in the Clean Water Act are not maximum daily caps, but total caps.

Congress should not dictate to the states any particular level of enforcement authority. If EPA believes that a state is not adequately enforcing the Act, EPA is always free to bring its own enforcement action. Alternatively, EPA may withdraw approval of a state program if the state's enforcement is inadequate. Prescribing penalty levels, particularly levels that are higher even than EPA is authorized to impose, is an egregious intrusion in state enforcement prerogatives. This provision should therefore be deleted from S. 1114.



20 October 1993

The Honorable Max S. Baucus
Chairman
Senate Environment and Public Works Committee
706 Senate Hart Office Building
Washington, D.C. 20510-2602

Dear Senator Baucus:

Enclosed please find testimony on and suggested additions to S. 1114, the Water Pollution Prevention and Control Act of 1993, an excerpt from EPA's *Managing Nonpoint Source Pollution*, and an excerpt from our January 1993 newsletter. Please enter them in the official record, and consider them as you discuss clean water legislation.

Sincerely,


Charles A. Cannon
Executive Vice President

cc: The Honorable Gerry E. Studds
Chairman, House Subcommittee on Environment and Natural Resources

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Charles A. Cannon

COMPOSTING AS A WATER POLLUTION CONTROL STRATEGY

THE COMPOSTING COUNCIL, 114 S. PITT ST., ALEXANDRIA, VA 22314 703 739 2401
20 October 1993

The Benefits of Composting

Composting is a way to make organic matter -- like agricultural wastes, sewage sludge, yard trimmings, and food scraps -- biodegrade under controlled conditions. The result is compost, which conditions and improves soil. Compost improves soil's ability to retain water, helps plants fight disease, and slowly releases nutrients to the soil. Plants grown in soil with compost are generally more robust and numerous. Compost is good for controlling erosion, repairing salt-damaged roadsides, reclaiming mineland and other disturbed land, and rebuilding wetlands. It's useful in nurseries, cropland, tree farms, parks, and in all kinds of landscaping.

Composting is Recycling

Composting is a way to recycle a large part of the waste stream not available to conventional recovery. It recycles agricultural waste, sewage sludge, yard trimmings, and food scraps into useful products valuable to agriculture, horticulture, and landscaping. Only when organic and conventional recycling are used in tandem can aggressive recycling targets be met. The US EPA considers composting to be a form of recycling, and includes it in its recycling numbers when reporting on the waste stream.

Its Role in Water Pollution Control

Composting has strengths well-suited to water pollution control efforts, in particular to nonpoint source pollution control. The US EPA and the state of Oregon explain some of them in the accompanying documents. In sum, composting has the following benefits to water pollution control:

- Composting ties up nitrogen and other excess nutrients that would otherwise go into runoff
- Compost is often used as a "biofilter" - air or water are passed through it, as it locks up heavy metals and other pollutants and lessens odors
- Compost retains water very well, which controls erosion and runoff, and reduces watering needs
- Using compost reduces the need for chemical fertilizers in the first place

We encourage Congress to realize in S. 1114 two important goals at once - to promote recycling and to curb water pollution - through the use of composting and compost use.

SUGGESTED AMENDMENTS TO S. 1114

THE COMPOSTING COUNCIL, 114 S. PITT ST., ALEXANDRIA, VA 22314 703 739 2401

20 October 1993

Proposed deletions are in ~~strike~~through, proposed additions are underlined.

Section 2 (a) (5) [page 4]

Substantial opportunities exist to improve water pollution control by using new water pollution control strategies, such as pollution prevention planning, water conservation, composting and compost use, the development of innovative pollution control technology, comprehensive watershed planning, and programs that protect the physical and biological properties of aquatic systems.

Section 2 (a) (7) [page 4]

Substantial opportunities exist to improve water pollution control by addressing pollution from nonpoint sources, such as construction, forestry, and agriculture, particularly through the use of watershed planning, targeted control measures, composting and compost use, and financial assistance.

Section 304 (a) "(c)" [page 108]

(1) In general - The Administrator, in consultation with the heads of other Federal agencies, shall publish guidance that specifies elements of nonpoint pollution management programs. The guidance shall consider composting and the use of compost as elements in nonpoint pollution management programs.

Section 304 (c) "(f) (2) (A) (i)" [page 119]

(i) provide for the implementation of management measures that are appropriate to the site, economically achievable by the owner or operator of the source, and will reduce water pollution; with consideration given to composting and compost use; ...

Section 304 (c) "(f) (3)" [page 120-121]

(3) Handbook - Not later than 18 months after the date of enactment of this paragraph, and as appropriate thereafter, the Administrator, in consultation with the Secretary of Agriculture and the heads of other appropriate Federal agencies and the States, shall publish a handbook to assist the development of plans for agricultural sources pursuant to this subsection. The handbook shall give consideration to composting and compost use.

Section 304 (d) (3) "(l) (1) (A)" [page 126-127]

(A) In general - The President shall direct the heads of appropriate Federal agencies that own or manage land to implement regulations that shall take effect not later than the date of enactment of this paragraph, to ensure the implementation of appropriate measures to control nonpoint sources of water pollution, including composting and compost use, and, at a minimum ...

Section 304 (e) "(o) (1)" [page 129-130]

(1) In general - Not later than 2 years after the date of enactment of this paragraph, the Administrator, in consultation with the Secretary of Agriculture, shall publish guidelines for the design of animal waste management facilities. The guidelines shall include appropriate composting facility specifications, as well as ...

Section 403 "Section 113 (b) (1) (I)" [page 144]

(I) promoting water-efficient vegetative cover, ~~and landscaping~~, composting and compost use; and ...

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**TESTIMONY OF
DON GRAY, WATER PROGRAM DIRECTOR,
ON REAUTHORIZATION OF THE CLEAN WATER ACT**

October 1993

**TESTIMONY OF DON GRAY, WATER PROGRAM DIRECTOR,
ON REAUTHORIZATION OF THE CLEAN WATER ACT**

I am pleased to submit this testimony on reauthorization of the Clean Water Act to the Subcommittee on Clean Water, Fisheries and Wildlife of the Senate Committee on Environment and Public Works.

The Environmental and Energy Study Institute (EESI) is a private, non-profit, non-partisan organization which seeks to promote informed Congressional debate on environmental and energy issues and to develop innovative policy responses. Earlier this year, we held a series of briefings entitled "New Policy Directions to Sustain the Nation's Water Resources," which elicited the views of a diversity of experts concerning today's most important water issues and policy options for their solution. A remarkable consensus emerged on the need for a more holistic and integrated approach to national water policy. There was also general agreement that such a national water policy should:

- (1) conform to the natural hydrologic system by taking into account the interconnections between groundwater and surface waters, the interrelationships between the nature and quantity of water use and water quality and the effects of both quantity and quality on water-dependent ecosystems;
- (2) give preference to pollution prevention as the most effective implementation strategy; and
- (3) utilize watersheds as the basic unit for developing and implementing water policy.

(A report on the briefings is attached.)

In my opinion, adherence to these three principles in the reauthorization of the Clean Water Act will improve the likelihood of achieving the goals of the act in the most cost-effective

manner. Such an approach would involve using pollution prevention and water conservation measures wherever possible on a watershed basis to address both point and "nonpoint" sources of surface and groundwater contamination and to protect and restore the ecological integrity of aquatic ecosystems. It also would allow flexibility to target the most acute problems in a given area and make maximum use of existing resources at all levels of government.

I commend the committee on the fact that S.1114 reflects these principles in many respects. However, there are two crucial areas which I believe are not addressed adequately under the existing Clean Water Act or other federal law or in S.1114. They are: (1) nonpoint source contamination of groundwater which may in turn pollute surface waters, and (2) using water conservation to achieve water quality goals.

These gaps can be dealt with by incorporating the principles and approach I have outlined into the Clean Water Act wherever possible.

REFLECTING THE DYNAMIC HYDROLOGIC INTERRELATIONSHIPS OF WATER

Groundwater

If the Clean Water Act is to meet its water quality goals, it must take cognizance of the interconnections between groundwater and surface waters. Groundwater contamination by pesticides, nutrients and other diffuse or nonpoint sources of pollution is so pervasive, and the extent of groundwater's contribution to surface water flows is so great, that contaminated groundwater can be a major pollutant of rivers, streams, lakes and wetlands.

Studies by the U.S. Geological Survey (USGS) indicate that groundwater supplies an average of 40 percent of streamflows nationwide, and that in some areas the figure may be as

high as 95 percent. By way of comparison, USGS estimates that the volume of groundwater discharged to the Chesapeake Bay is equal to that discharged by the James River.

Groundwater provides a pathway for the transport of pollutants, and, if high groundwater contaminant levels coincide with groundwater discharge points to surface waters, the result may be serious surface water pollution. Conversely, during flood periods, heavily polluted surface water may leach into and be stored in groundwater until it is discharged back to the stream, thus creating a continuing source of surface water pollution. Early data from USGS indicate that the recent flooding in the Midwest may present a graphic illustration of this problem.

There is ample evidence that surface water quality has already been degraded by contaminated groundwater in many areas. For example, a 1991 study by USGS found high levels of the herbicide atrazine in the Cedar River in Iowa, even during periods when there was little surface water runoff. The study concluded that the atrazine came from groundwater contaminated some distance from the river. Other USGS studies have found that contaminated groundwater is a persistent source of herbicide pollution in many Midwestern streams and that groundwater substantially affects the water quality of streams in the Suwannee River Basin in Florida. A non-USGS study estimated that 50 percent of the pollutant loading to the Niagara River is from groundwater sources.¹

At a recent EESI briefing, scientific experts discussed numerous examples where control measures which focus only on direct sources of surface water pollution -- and ignore groundwater -- are ineffective. Paul Jehn of the Water Resources Research Institute at the University of Idaho presented evidence that groundwater contaminated by nutrients from agriculture, animal feedlots, septic tanks and other sources not subject to National Pollutant Discharge Elimination System (NPDES) permitting requirements under the Clean Water Act, or to regulation under the Solid Waste Disposal Act (SWDA) or other federal law, has contributed significantly to eutrophication

¹ Tarlock, Dan, *Symposium on the Prevention of Groundwater Contamination in the Great Lakes Area*, Chicago, Kent Law Review, Vol. 65.

of the Snake River in Idaho. According to USGS, four-fifths of this river's flow is derived from groundwater. Jehn reported that the mats of algal blooms resulting from the eutrophication are so thick that muskrats have been spotted walking across the river on them, and they ensnared the governor of Idaho's boat during an inspection tour.

At the same briefing, Professor Jack Stanford, a groundwater ecologist from the University of Montana, described recent scientific discoveries that many forms of marine life move back and forth between groundwater and surface waters. These discoveries led him to conclude that the existing widespread contamination of groundwater may harm or destroy unique species which provide crucial ecological connections between groundwater and surface waters. Consequently, he recommended that the Clean Water Act be amended to protect and enhance the interactions between groundwater and surface waters in order to protect and restore their biological integrity, a stated goal of the act.

Although surface and groundwater quality are clearly linked, groundwater is not accorded the same level of protection under the Clean Water Act. For example, groundwater protection is not specifically included in the act's declaration of goals and national policy and is not regulated as an indirect route of point source discharges under Section 402. Nor are the nonpoint source assessment and management requirements of Section 319 mandatory for groundwater.

It appears to me to be self-defeating to spend billions of dollars to cleanup surface water and not take adequate steps to prevent the contamination of groundwater which can repollute it. I am not advocating the adoption of a new federal regulatory program for groundwater. But there are provisions currently within the Clean Water Act which can be strengthened or expanded in order to prevent the pollution of surface waters by contaminated groundwater.

For example, if the Clean Water Act is to achieve its ultimate objective "...to restore and maintain the chemical, physical, and biological integrity of the nation's waters," I believe the national policy expressed in Section 101 (a)(7) "that programs for the control of nonpoint sources

of pollution be developed and implemented in an expeditious manner..." must be amended to make clear that it applies to groundwater as well as surface water.

There also is a need to incorporate groundwater into some of the regulatory provisions of the act. I do not think it is necessary or practical to extend the NPDES permit requirements to cover point source discharges to groundwater because most such major sources are regulated under the Resource Conservation and Recovery Act (RCRA) or the Safe Drinking Water Act (SDWA) or other federal law.

I was pleased to note that the provisions in Section 201 of S.1114 dealing with effluent guidelines, new source performance standards and pretreatment standards for point source industrial dischargers, "prohibit or limit the release of pollutants to other environmental media (including ground water) to the extent that ... is technologically and economically achievable...."

However, I think that Section 402 of the act also should be amended to require that, as a condition of receiving a new or renewed NPDES permit, a discharger must demonstrate that the facility is managing all potential pollutants in a manner that will not contaminate groundwater, or that the groundwater is not hydrologically connected to a surface water body. Such a requirement would prevent a permittee from meeting NPDES permit discharge limits by storing pollutants in unlined surface impoundments, or using other methods that could contaminate groundwater, thereby creating an unpermitted route of point source discharges to surface water.

Industrial wastewater lagoons containing hazardous wastes are subject to the groundwater monitoring, liner, land ban and other requirements of RCRA. However, lagoons not subject to these requirements, because they do not contain hazardous wastes, could still contain pollutants such as industrial non-hazardous wastes, nitrogen and phosphorous that may adversely affect water quality and marine life.

Moreover, lagoons at publicly owned treatment works containing hazardous or other wastes mixed with domestic sewage are not subject to the RCRA requirements. Yet a Congressionally mandated study by the Environmental Protection Agency (EPA)² identified 5,476 municipal wastewater lagoons nationwide, of which 433, or 8 percent, receive significant quantities of industrial wastewater. Sampling data identified 94 priority pollutants at concentrations up to 1000 parts per billion (ppb) in lagoons receiving industrial wastes and 35 priority pollutants at concentrations up to 280 ppb in those receiving only domestic wastewater. Using the sampling data and computer modeling to assess the potential impact of municipal wastewater lagoons on groundwater quality and human health, the study concluded that, while the potential for each is low, "some lagoons with industrial discharges may be potential sources of ground-water contamination [and] lagoons with significant industrial discharges pose a potential risk to human health."

The report found that state standards for lagoon design and construction and for groundwater monitoring vary widely and that some may be inadequate for protection of groundwater where lagoons receive significant industrial wastes. Consequently, it recommended that states review their standards and monitoring requirements for such lagoons located in highly vulnerable hydrogeologic settings and outlined a number of steps which could be taken to prevent their contaminating groundwater. Therefore, it does not seem unreasonable to require in the Clean Water Act that applicants for NPDES permits which have lagoons demonstrate that they have taken appropriate steps to prevent the contamination of groundwater which could in turn contaminate surface waters.

I also recommend that Section 319 be amended to extend the requirements of the nonpoint source assessment and management provisions to include groundwater that is hydrologically connected to surface water. Section 319 currently requires states to identify streams subject to nonpoint source pollution and develop programs to control the activities responsible for the

² *Report to Congress: Municipal Wastewater Lagoon Study, 1987*

pollution. But the state programs are not *required* to address nonpoint sources of groundwater contamination and are unlikely to use limited resources to do what they are not required to do.

This narrow perspective ignores the natural hydrologic system and may undermine the effectiveness of the act in preventing surface water pollution. For example, efforts to reduce surface runoff of nonpoint pollutants by retaining water in or on the ground may increase the likelihood that the pollutants will leach to groundwater and, where the groundwater and surface water are interconnected, may merely change the route they take to the surface water. The failure to require state programs to address nonpoint sources of groundwater contamination creates a serious gap in water quality protection, since nonpoint sources of groundwater contamination are not addressed adequately under other federal laws.

I am concerned that S.1114 strikes paragraph (5) of subsection (h) of Section 319, which authorizes the Administrator, in making nonpoint source program implementation grants, to give priority to states which implement certain types of activities. Among the priority activities eliminated is one to "carry out ground water quality protection activities which ... are part of a comprehensive nonpoint source pollution control program, including research, planning, ground water assessments, demonstration programs, enforcement, technical assistance, education, and training to protect ground water quality from nonpoint sources of pollution."

I believe that this may be the result of a drafting error, which I hope will be corrected. If not, it would certainly be a step in the wrong direction in view of the great harm which nonpoint source contamination of groundwater can inflict on surface waters. An approach that relies on cleaning up groundwater later, if it interferes with achievement of surface water goals, is short-sighted and likely to fail because groundwater cleanup is difficult, expensive and time-consuming.

Water Quantity

Just as groundwater is a key component of the natural hydrologic system with a clear impact on surface water quality, so the quantity of water in the system has significant impacts on water quality and water-dependent ecosystems. If water is used more efficiently, the quantity of water in lakes, streams, wetlands and aquifers is likely to be closer to natural levels. As a result, water quality can be protected more readily, and wetlands can be maintained and aquatic ecosystems preserved, especially during periods of low rainfall.

I believe that issues involving water quantity, maintenance of instream flows and water use efficiency can be addressed most effectively on a watershed basis. Therefore, I recommend that the watershed planning and management activities proposed in S.1114 and the state programs for nonpoint pollution control required by Section 319 of the act specify that these critical issues be addressed.

Other Clean Water Act provisions also should be amended to conserve water and protect aquatic ecosystems. For example, Section 303 should be amended to mandate that during the water quality standard-setting process, each state establish minimum stream flow requirements, in order to spur water efficiency initiatives and protect aquatic life.

Wetlands

Wetlands provide a vivid demonstration of the dynamics of the natural hydrologic system because they are dependent upon the quantity and quality of both ground and surface waters. Studies by USGS indicate that in many, if not most, cases, wetlands are the visible discharge of groundwater rather than the recharge area for groundwater. Consequently, wetlands protection is highly dependent upon protecting both the quantity and quality of groundwater. Similarly, construction of artificial wetlands to replace those that are lost can succeed only if the natural hydrologic system can supply the quantity and quality of water necessary to sustain them and the ecosystems they support.

EESI is a member of Water Quality 2000 and supports its recommendations for protecting wetlands, which have been transmitted to the committee. These include making wetlands protection an explicit goal of the act, expanding the scope of the Section 404 program to include more of the activities that destroy wetlands, strengthening the permitting program to address cumulative and incremental impacts, and adopting tax and other financial incentives to encourage protection of privately owned wetlands.

I was pleased to see that S.1304, the wetlands bill introduced by the Chairman and Ranking Minority Member of the committee, and which I understand will be incorporated into the reauthorization bill, is responsive to many of these recommendations. I was especially pleased to note that the definition of a wetland in the bill includes areas inundated or saturated not only by surface water, but by groundwater as well.

I think this is a very good idea, since so much of the water in wetlands comes from groundwater.

S.1304 requires that the wetlands delineation guidelines be based on the best available scientific information and take into account regional variations in hydrology, which I assume would also include groundwater as well as surface water. However, it may be advisable to specify that both groundwater and surface water hydrology be taken into account.

POLLUTION PREVENTION IS THE MOST EFFECTIVE IMPLEMENTATION STRATEGY TO ACHIEVE CLEAN WATER ACT GOALS

The Clean Water Act implicitly recognizes pollution prevention as the preferred strategy for restoring the integrity of the nation's waters by adopting as a goal the elimination of all pollutant discharges. The pollution prevention planning requirements in Section 205 of S.1114 are a positive step towards the achievement of this goal. However, they cover a minimum of only 20 pollutants, reductions in the discharge of which EPA determines "are likely to result in

a benefit to human health or the environment." Moreover, pollution prevention plans would be required only of those applicants for new or renewal NPDES permits who are identified by EPA as being collectively responsible for 80 percent of the discharges of any such pollutant.

These provisions imply that there are at least 20 identifiable pollutants for which discharge limits are too high. If so, EPA already has the authority to lower them, within the limits of available technology. But identifying the pollutants and the dischargers to be covered will place a tremendous additional burden on EPA and is likely to lead to protracted legal wrangling which may in fact delay pollution prevention efforts.

I believe that a simpler and more effective way to move towards the act's goal of eliminating pollutant discharges would be to require that all applicants for new or renewal NPDES permits and indirect dischargers prepare pollution prevention plans as outlined in Section 205 and guidance to be issued by EPA, but allow them some flexibility to suggest which pollutants are to be reduced, by how much and in what ways. The adequacy of the plans in terms of localized water quality needs could be determined as part of the permit approval process.

I believe that such an approach, along with my proposed NPDES amendment to protect against indirect discharges through groundwater contamination, would provide an effective, hydrologically consistent program for further significant reductions in point source pollution of the nation's waters.

Nonpoint Sources of Pollution

The act's provisions to prevent pollution from nonpoint sources also need to be strengthened. EPA's most recent water quality inventory report in 1990 found that water quality has improved in many locations during the last 20 years, but one-third of the assessed U.S. waters still do not fully meet state water quality standards -- despite billions of dollars spent to control discrete point sources of contamination. According to the report, more than half of the

remaining pollution entering the nation's waters comes from activities that discharge pollutants through diffuse, nonpoint sources.

A reauthorized Clean Water Act must do a better job of preventing nonpoint source pollution both from runoff to surface waters and leaching to groundwater, if the act's water quality goals are to be realized in a cost-effective manner. The current Section 319 program has had mixed success in large part because the program lacks teeth. There is little in the section to require states to alter the activities which cause pollution from nonpoint runoff or leaching. EPA has limited control over what goes into the state program plans. If a state does not develop a satisfactory Section 319 plan, EPA's only leverage is to withhold grant monies for plan implementation. There is no cross-compliance provision where a state would lose funds under other water-related programs for failure to comply with Section 319.

There are several ways the act should be amended to strengthen Section 319. States should be required to demonstrate the enforceability of their nonpoint source control programs and to include implementation milestones. Eligibility for state revolving loan fund (SRF) and other Clean Water Act-related monies should be subject to reduction if a state fails to fully comply with Section 319.

I also recommend amending Section 319 to require that state nonpoint source plans adopt a pollution prevention-based approach. Such plans should not rely solely on traditional best management practices (BMPs) that use structural or technology-based methods to control the volume of runoff that reaches streams, or that treat it before it reaches streams.

Instead, they should focus on an array of operations and process changes which would reduce the availability of pollutants for runoff and leaching. For example, preventive BMPs should include slope and vegetative cover considerations in construction activities. They should include integrated farm resource management plans which include alternative cropping systems, crop rotations and soil testing to minimize chemical use and prevent erosion. These plans should be similar in principle to the point source pollution prevention plans proposed in Section 205 of

S.1114. In general, BMPs in Section 319 plans should not result in the equivalent of an end-of-the-pipe approach for nonpoint sources.

To make the entire program more workable, I endorse the changes recommended by Water Quality 2000.³ While S.1114 attempts to improve the nonpoint source program, it fails in the following critical respects:

- * Planning and enforceable implementation of preventive actions for potentially polluting activities should be mandatory for all states.
- * Leaching to groundwater as well as runoff should be included in plans and preventive actions.
- * Implementing site-level integrated farm resource management plans to prevent pollution should be required for all farms in watersheds where water quality is impaired or at risk due to farm-related pollution. Application of national BMPs, as proposed in S.1114, would not provide pollution prevention gains equivalent to those of individual site-level assessments of operations and process options.

Preventing Pollution by Using Water Efficiently

The potential for conservation and increased water use efficiency to help achieve Clean Water Act goals goes beyond maintaining stream volume and flows. As population increases, pressure is growing on limited freshwater resources and on wastewater treatment funds. Increased water use efficiency can help to protect and restore our nation's waters by reducing this pressure and ensuring a cost-effective use of existing water supplies and SRF monies.

³ See pages 17-21 and 51-53 of the report, *A National Water Agenda for the 21st Century*, which has previously been provided to the Subcommittee.

Water use efficiency also can be a pollution prevention tool. For example, efficient water use can reduce flows to wastewater treatment plants thus reducing the likelihood and duration of combined sewer overflows and their resulting water quality impacts. A recent EPA-sponsored study found that conservation is likely to improve the performance of wastewater treatment to some extent.⁴ The same study found that water conservation can result in substantial savings for communities facing the need for significant capacity expansion or additional treatment by downsizing or delaying new capital investment.

One example of such savings occurred in Goleta, California. During the recent California drought, the city was faced with serious water supply constraints. In response, the city implemented an aggressive and extensive water efficiency program that reduced water use 50 percent. An unexpected benefit was significantly reduced loads to their wastewater treatment facility. Input declined by more than 40 percent. As a result, the city was able to forego building a multi-million dollar wastewater treatment expansion.

Another example involved San Simeon, a California tourist community with such a severe drought-related water shortage that the closing of its motels was being considered. Instead, the community decided to install water conservation devices on all toilets and showers and to eliminate irrigation. As a result, total water use was reduced by 39 percent; there were no sewer blockages; wastewater system performance was so improved as a result of decreased flows that a planned expansion was delayed for 7 years, saving \$750,000; and drinking water plant expansion costs were reduced from \$3,500,000 to \$600,000.

Water conservation also can decrease the cost of wastewater treatment chemicals and reduce the energy costs associated with treating and pumping water. The potential for energy cost savings is significant. A recent study found that in some California cities, energy costs

⁴ *The Effects of Water Conservation on Water Utilities*: Summary prepared by U.S. EPA Office of Policy Analysis, June 1992.

associated with municipal water supply and wastewater treatment exceed 50 percent of total municipal utility expenditures.⁵

I am pleased to see that Section 205 of S.1114 requires some applicants for new or renewal NPDES permits to address water use efficiency in their pollution prevention plans, but, as previously noted, I think that such plans should be required for all such applicants.

In view of the potential savings in the estimated \$137 billion needed for capital improvements in wastewater treatment facilities over the next 20 years, according to EPA's latest needs survey, and the rapid growth in municipal utility fees, I recommend that the act be amended to direct EPA to set minimum water efficiency standards for water and sewer utilities and to condition permits, grants and SRF loans for new or expanded wastewater treatment facilities upon meeting such standards.

In addition, I recommend that the act explicitly authorize the use of SRF funds for water conservation programs, alternative treatment systems which employ less water-intensive approaches, and the recycling and reuse of wastewater where practicable and economical.

Some utilities have undertaken major water efficiency programs, and many other state and local entities are interested in opportunities to reduce water use, but lack information and the technical resources to plan and implement such programs. I therefore endorse the provisions in S.1114 to establish a clearinghouse for information on water conservation and to provide technical assistance to state and local governments and water utilities to improve water use efficiency.

⁵ *Energy Efficiency Report*, California Energy Commission, October 1990.

**THE CLEAN WATER ACT SHOULD INCORPORATE WATERSHED UNITS AS
THE MECHANISM FOR INTEGRATING AND MANAGING SURFACE AND
GROUNDWATER AND WATER QUALITY AND QUANTITY FOR
COMPREHENSIVE PROTECTION OF THE NATION'S WATERS.**

Watersheds are the natural routes of surface waters that drain an area and are generally connected with groundwater aquifers. Interactions between land use, water use, ground and surface water quality, and aquatic habitat generally occur within a watershed. Also, in a given watershed there may be thousands of pollution sources ranging from farming operations to municipal storm sewers.

As a part of Water Quality 2000, EESI joined the growing consensus that watershed areas should be the basic planning and implementation unit for protecting the nation's water resources. I believe such an approach offers the opportunity, in a workable geographical area, to develop comprehensive pollution prevention and integrated water resource plans which reflect the interconnections between groundwater and surface waters and the interrelationships between water use and water quality.

A watershed approach allows involvement of the widest array of perspectives in the planning and management process. It can facilitate the integration of state water quality programs into state water allocation decisions. Perhaps most importantly, this approach allows limited financial resources to be targeted at the worst problems or those for which the greatest water quality improvement can be expected.

There are a number of reasons why a watershed-based approach may be effective. First, because watersheds frequently cross political and geographic boundaries they may be the best scale on which to address nonpoint sources, which also frequently cross political and geographic boundaries. Second, the watershed approach seeks to maximize the effectiveness of all levels of government -- federal, state, tribal and local -- by allowing each to do what it is best equipped to do on a cooperative basis. Such cooperation is particularly important because many nonpoint

sources of contamination result from land use patterns which are traditionally regulated by state, local or tribal governments. Third, a watershed-based approach can undertake broad-scale water use efficiency measures which have a greater chance of enhancing instream flows and protecting aquatic habitat than smaller, isolated efforts.

As a member of Water Quality 2000, EESI endorses its specific recommendations for a new, nationwide watershed program.⁶ In particular, I urge the Subcommittee to make watershed planning and management mandatory, not voluntary as proposed in S.1114. In addition, I do not believe S.1114 is clear as to whether a state electing to designate a watershed management unit and develop a management plan would be required to include groundwaters hydrologically connected to the designated surface waters.

As EPA Administrator Carol Browner noted in her testimony on CWA reauthorization to the House Committee on Public Works and Transportation:

"We are increasingly finding that in certain watersheds ground water recharge to surface waters can be a critical factor in determining the ecological health of aquatic systems. We need to ensure incorporation of ground water in our watershed approach where it significantly influences surface water quality, and we need to guard against the possibility of transferring a pollution problem from surface water to underground sources of drinking water."

I believe it is imperative to the success of the watershed approach that consideration of the potential for pollutants to leach to groundwater and then discharge to surface waters be an integral part of all planning and management activities. I therefore recommend that Section 302 of the bill be amended to clearly require that designated watershed management units and plans incorporate groundwaters that are hydrologically connected to designated surface waters. And, where groundwater aquifers transcend watershed boundaries, cooperative arrangements between

⁶ See pages 32-39 of *A National Water Agenda for the 21st Century*.

watershed areas should be required so that each watershed plan can effectively protect these regional aquifers.

As previously stated, I recommend that the comprehensive watershed management provisions of S.1114 be amended to incorporate water use efficiency and instream flow requirements. Otherwise, they will not be truly comprehensive. I also recommend that the bill be amended to require that the Section 319 nonpoint source prevention planning and implementation activities be incorporated into designated watershed management area plans.

In conclusion, I was pleased to see that the bill provides for technical assistance and some forgiveness of principal on SRF loans for small, economically disadvantaged communities and increased funding to Indian tribes for wastewater treatment works, planning and construction, and nonpoint source pollution management. Studies indicate that such communities are at a distinct disadvantage in competing for funds under the current SRF program.

Again, I commend the work of the Subcommittee. I believe its proposed revision of the Clean Water Act will improve and expand the nation's efforts to protect water quality. I hope the proposed changes I have outlined to recognize the impacts of the natural hydrologic system, to expand pollution prevention actions, and to plan and manage water quality protection on a watershed basis will help you to ensure that the act meets its goals.

Thank you for this opportunity to comment on the Clean Water Act reauthorization. We at EESI look forward to working with you and would welcome the opportunity to discuss our recommendations more fully.



ENVIRONMENTAL HEALTH COALITION

1717 Kettner Boulevard, Suite 100 • San Diego, California 92101 • (619) 235-0281 Fax (619) 232-3670

August 3, 1993

Senator Bob Graham, Chairman
 Environment and Public Works Committee
 U.S. Senate
 Washington, D.C. 20510

RE: Comments by San Diego Environmental Health Coalition for hearing record on S.B. 1114.

Dear Senator and members of the Committee:

The San Diego Environmental Health Coalition is a local, non-profit organization that lacks the budget to travel to Washington to give testimony but we request that our comments be made part of the hearing record on S.B.1114.

San Diego's reputation as a water recreation tourist destination is threatened by the pollution of San Diego waters. Lack of enforcement by our regulatory agencies, most notably the Regional Water Quality Control Board (enforcers of the current Clean Water Act) is the cause. In 1991, San Diego County had 382 beach closures including 3 permanent closures--almost half of the closures in the State. The opening of the tourist season was marked with the posting of the Pt. Loma kelp bed, determining it off-limits to fishermen, surfers, and divers. San Diego Bay has been posted with a fish consumption health advisory since a June 1990 County Department of Health Study found elevated levels of PCB and mercury in some Bay fish. Some species of bay fish have high rates of physical anomalies and mussels register high levels of toxics in their tissue.

Environmental Health Coalition (EHC) is urging your support of a stronger Clean Water Act. We are especially calling for improved enforcement and mandates for elimination of discharges of toxic pollutants to our Nation's waters. Some of the examples below may illuminate the severity of the problem to you.

Discharge of toxic chemicals to waterways are allowed under the current Clean Water Act. In 1991, California industries reported

discharging 10,232,335 pounds of toxics to surface waters and 28,349,693 pounds of toxics to sewage treatment plants. California is in the top 10 for both discharges to sewer and surface waters. Toxic chemicals, even in low concentrations, can bioaccumulate in fish and make them unfit for human consumption, cause deformities in juvenile fish, or cause total reproductive failure. From 1990 to 1992 there were fishing bans or advisories in force in over 720 locations in the U.S.

SAN DIEGO BAY TOXIC POLLUTION

Locally, Environmental Health Coalition is calling for action to cleanup waterways to a fishable and swimmable state. San Diego Bay suffers from toxic hotspots including the highest levels of PCBs in sediment on the West Coast and significant contamination from naval facilities located around the bay.

San Diego Bay has been posted with a fish consumption health advisory since a June 1990 County Department of Health Study found elevated levels of PCB and mercury in some Bay fish. The study also found evidence of radiation. Follow-up studies to examine dioxin levels and further characterize extent of contamination of fish were recommended but have yet to be done.

San Diego Bay has suffered tremendous losses of natural wetland and upland habitats. We must protect what is left. Already one third of the Bay has been filled in, and San Diego Bay has lost 92% of salt marsh habitat, 81% of intertidal flats, and 72% of shallow subtidal (0-6 ft MLLW) habitat. Virtually all of the upland habitat around the Bay has been converted to urban and industrial uses. How much more are we willing to lose? The current rate of wetlands loss nationally is 290,000 acres a year. Coastal wetlands are valuable to fish because they provide spawning and nursery habitat for 60 to 90 percent of the country's commercial fish catch.

THE SAN DIEGO REGION SUFFERS FROM LACK OF ENFORCEMENT OF THE CLEAN WATER ACT

One strong example of the correlation between the lack of enforcement and pollution in the waters can be seen in the recent nomination by Governor Pete Wilson of Mary Jane Forster to the State Water Resources Control Board. Environmental Health Coalition has monitored the Regional Board meetings for the past 5 years. Mrs. Forster has been a member of the Regional Board since 1984. During this time she has often determined the degradation of water quality in the San Diego region as an inevitability. She has used this rationale for allowing continued pollution of native waters. That she has been nominated for promotion speaks to the fact that states cannot be solely relied upon to protect water quality.

Mrs. Forster's overriding concern and greater sensitivity for polluting industries over the use of native waters by the common citizen is frequently evident. A serious example of this was her comments in a July, 1987 hearing on the Van Tol Dairy Expansion. The dairy was far out of compliance with current waste discharge requirements and was requesting an expansion of their operations. The dairy was suspected of polluting drinking wells of residents. Mrs. Forster said, "In agriculture areas,

people should give their children bottled water." This let-them-eat-cake-and-drink-bottled-water ethic that Mrs. Forster has often proposed, is not what we expect or deserve from the regulatory officials that are in charge of protecting our State's water quality. (See attached article)

She has also stated on the record that the goals of "no net loss" are "not good" and would be "suicidal" for the Regional Board to try to follow. The downward spiral of water quality and loss of wetlands in the San Diego region should be no surprise given this hostile attitude toward the environment by our regulators.

The Regional Board regularly makes decisions that are non-protective and inappropriate and enforcement has been, too often, nonexistent. They have chastised their staff for trying to bring impending violations to the Board's attention. This Regional Board has turned a blind eye to City of San Diego violations of their Pt. Loma sewage treatment NPDES permit for 28 out of the last 60 months. This has resulted in tons of illegal sludge disposal in the ocean. For example, in March 1992 651 dry tons of suspended solids over permit limit were discharged to the ocean at Pt. Loma. The Regional Board has known about these violations for over a year and taken no action at all. (See attached documentation)

A 1991 EHC review of self-monitoring and compliance records of 19 NPDES permit holders around the Bay revealed significant lack of enforcement. Of 222 violations, only 2 fines were imposed. One percent enforcement is not adequate and will not result in clean water.

Other disturbing actions follow:

Eastern Municipal Water District NPDES permit-

In 1992, the Regional Board completely abdicated their responsibility to enforce the law requiring EPA to take over administration of an NPDES permit for Eastern Municipal Water District. The Board refused to adopt a permit that had a chronic toxicity standard. This is especially interesting given that the discharge was to provide a live-stream restoration.

Hazardous Waste Strike Force

In July of 1992 the Regional Board was removed, by the FBI, from the Hazardous Waste Strike Force for unwillingness to participate. A year later, they have yet to be reinstated.

Spanjian Inc.

The Regional Board allowed a discharge of TCE to remain in a groundwater basin designated as drinking water in levels 80 times above Title 22 standards.

Mr. Chairman and members of the committee, we need your help. We need a stronger Clean Water Act one that will require enforcement, pollution prevention, and result in clean water!

Thank you for the opportunity to comment on this very important legislation.

Sincerely,

A handwritten signature in black ink that reads "Laura Hunter". The signature is written in a cursive, flowing style.

Laura Hunter, Director
Clean Bay Campaign

cc. Senator Max Baucus, Chairman
Senator John Chaffee
Senator Dianne Feinstein
Senator Barbara Boxer

SAN DIEGO BAY FACTS

San Diego Bay has lost:

92% of Salt Marsh habitat

81% of intertidal flats

72% of Shallow subtidal (0-6 ft MLLW) habitat

Virtually all of the upland habitat around the Bay has been converted to urban and industrial uses.

Black Skimmer, Caspian Tern, and Least tern eggs have been found to contain DDE and PCBs.

Significant mortality and growth impairment was observed in sand dollars, polychaetes, and surf smelt when exposed to sediments from 3 sites in San Diego Bay.

Over 11 million cubic yards of dredging is anticipated in the next few years from Navy dredging projects alone.

The Pt. Loma Kelp bed is facing a quarantine for several months, just as summer begins.

The San Diego Port Master Plan has been amended over 16 times. Environmental and public interest groups have called for comprehensive planning of the Bay to ensure its ecological viability.

South San Diego Bay appears to be an important nursery area for juvenile California halibut and possibly for the young of spotted and barred sandbass and other species. Young of the year and larger juveniles of the white seabass (Atractoscion nobilis) have been taken in samples from South San Diego Bay during recent years. This is particularly significant because the population of white seabass in southern California apparently has been reduced significantly by over fishing or other causes.

San Diego Bay is the only place on the West Coast where Pacific Green Sea Turtles congregate.

The Bay supports an impressive number of species, including 9 endangered species, over 100 species of waterfowl and shorebirds, and 90 species of fish and shellfish. The mudflats of the south Bay are a significant stopover for migrating birds on the Pacific Flyway.

Only South Bay has significant areas of marsh, mudflats, and salt ponds. Freshwater inflow has been diminished by dam construction, extensive groundwater use, diversion of the San Diego River, and prolonged drought conditions.

STATEMENT of

FRANK F. FASI, MAYOR
City and County of Honolulu

before

SENATOR ROBERT GRAHAM, CHAIRMAN
and Members of the Subcommittee on
CLEAN WATER, FISHERIES AND WILDLIFE
UNITED STATES SENATE

August 4, 1993

Senator Graham, Senator Chafee and Members of the subcommittee, I am C. Michael Street, Chief Engineer and Director of the Department of Public Works of the City and County of Honolulu here on behalf of the City and Mayor Frank F. Fasi. I am here to testify on Senate Bill 1114, the Water Pollution Prevention and Control Act of 1993, a bill to amend and reauthorize the Federal Water Pollution Control Act.

The reauthorization of this Act is of critical importance to everyone across America concerned with protecting our precious and fragile environment. In his comments introducing this legislation, Senator Baucus called it a reauthorization "debate" and recognized it as a microcosm of the general debate about how best to protect the environment. He said this legislation will not satisfy those on the extremes of the debate, because it is designed to take a balanced, cooperative approach to solving the Nation's environmental problems. The City and County of Honolulu is pleased to participate in this cooperative effort.

Our City is in the center of this great debate because we have been victim to "Clean Water Act" lawsuits by citizen groups to the tune of \$500 million. There is irony in this because two of the City's wastewater treatment plants won gold and silver awards from the National Association of Metropolitan Sewer Agencies.

Environmentally, Honolulu ranks highest in the nation by many standards and has won awards for the outstanding quality of life provided for its residents and visitors. Honolulu was named the healthiest of America's 100 largest metropolitan areas in the 1992 Livable Cities Almanac, and was also ranked 7th out of 300 American cities with populations over 500,000 as most livable by Money magazine. World Resources Institute's Environmental Almanac named Honolulu America's No. 1 Green City in 1992 and No. 1 Green Metro Area in 1993. We must be doing something right!!

The City and County of Honolulu has a resident population of 861,000 and consists of 620.5 square miles. The deep, blue Pacific Ocean completely surrounds the island, and is a precious resource, along with pristine waters from our mountain dikes and caprock aquifers. Some overzealous environmental activists suggest by their actions and statements, that we take this God-given gift for granted, and have allowed its degradation.

They are wrong! Honolulu has taken these priceless treasures under fervent stewardship and protection for many years.

Since 1972, the City and County of Honolulu has spent \$1.7 billion on waste water. This amounts to \$109.77 per year for every man, woman and child in the City. Next year alone, the City will spend \$205 million on wastewater treatment and disposal.

The Clean Water Act's expectations translate into an ever growing financial commitment on the part of local government. Over \$23 billion will be required for cities to meet the current requirements of the Clean Water Act to the year 1995. Cities such as Honolulu pay 80-90 percent of the cost in order to comply with the requirements. Operation and maintenance costs, which are totally paid by the local taxpayers, are

expected to double every eight years. Historical data show that annual household use fees will, at a minimum, double every six years.

In Honolulu, sewer rates have increased by more than 40 percent. It has cost a typical Honolulu family of four nearly \$300 for sewer fees and nearly \$263 annually for water, totaling about \$563 annually. As of July 1, 1993, sewer fees have increased to nearly \$412 annually per household to comply with federal environmental laws. Water fees also have been increased to nearly \$295 yearly. Honolulu residents will be paying nearly \$707 for sewer and water -- \$144 more than last year. Honolulu has beat out Boston residents, who were paying the nation's highest water and sewer rates. A typical Boston family of four pays \$590 each year for water and sewer. Boston expects its water and sewer rates to to \$1,300 per household by 1999. Honolulu can expect the same unless something is done.

Increased federal funding for the State Revolving Funds program, as proposed by S.B. 1114 will greatly assist the City and County of Honolulu. We must complete some expensive and important projects to meet compliance deadlines, especially in the area of sewer rehabilitation as it relates to infiltration and inflow problems.

However, the bill's provisions for fees will cause Honolulu's taxpayers, and probably those of other municipalities and cities, additional financial burden. Permittees should not be required to pay fees for enforcement, state water quality monitoring, development of water quality standards, modeling, planning, etc., and public information systems. These should be supported by federal or state general funds.

Senator Baucus' comments for himself and for Senator Chafee in introducing the proposed new Water Pollution Prevention and Control Act stressed a desire to achieve environmental progress through the use of sound science and sound economics. We agree with Senator Baucus and ask for legislation arising from real, rather than perceived, environmental problems.

Public policy decisions driving the Clean Water Act requirements should be based on tested, proven scientific facts to prevent the type of unsubstantiated fear and environmental hysteria gripping some citizens of this nation. We ask for funded, researched, fact-based legislation, responsible to local taxpayers and which can be translated into practical, reasonable and necessary regulations.

As we look back on 20 years of environmental regulation, we find much that is well-meaning and that has been effective for the nation. But as with all programs, some parts can be found to be working better than others. Environmental laws which impose the same conditions, restrictions, requirements and consequences on all without taking into account the real and inevitable differences in regions and the degree of actual harm caused, are fatally flawed laws. When the same intensity of scrutiny and consequence is applied to a one-gallon sewage spill in Honolulu as is applied to a chemical leak from a rail car in California or a nuclear plant release in Pittsburgh, the intent of the law has clearly been lost. The Clean Water Act should take into account the wide ecological variations in different geographic locations. What makes sense for eastern seaboard cities or land-locked middle western states may not make sense for an island such as ours located in the middle of the Pacific Ocean. The Clean Water Act should be flexible to accommodate these

variations if it is to make any sense. Scientists would agree that it currently fails to do this.

The City and County of Honolulu is the only city in the United States completely surrounded by deep ocean water, which is discharging sewage effluent through a deep ocean outfall. This is a truly unique regional difference that requires accommodation in the law. The conditions creating the waiver from secondary treatment provision in the Act still exist. Accordingly, we request amendment to the Act allowing for reinstatement of the 301 (h) waiver application program.

There are two aspects of the law regarding provision for citizen suits, with which Honolulu has had experience and recommends amendments. While legislative history indicates that Congress directed EPA to withhold enforcement action against waiver applicants during the pendency of their application, there was no such prohibition against citizen groups.

Honolulu has been sued twice, by environmental groups, with the National Sierra Club Legal Defense Fund being a principal instigator. Both lawsuits arose due to the fact that the City's 301 (h) waiver permit application had undergone over 12 years of review by both EPA and the State of Hawaii, Department of Health. In other words, Honolulu's first 301(h) Permit application submitted to EPA in 1979 took over 12 years!

When the City's permits were finally issued in 1990 and 1991, environmental activists challenged EPA's decision to issue the City a 301 (h) waiver. This challenge prevented the waiver permits from going into effect. These same environmental groups then sued the City in both cases in federal court based on the argument that there was no waiver permit in effect. Based on its interpretation of the Clean Water Act, the Court

found the City liable for violations of treatment requirements, although there was no evidence of any measurable harmful impact to the ocean. Combined, the City's exposure in the two cases was \$500 million. Something is clearly wrong with the laws and regulations which allow this kind of situation to occur. Even the Court recognized the illogical consequence for the City.

Similarly, the current Citizen Enforcement provision in the Act as interpreted has provided a feeding frenzy for citizen groups at great and unnecessary expense. In Honolulu, the courts have interpreted the Citizen Enforcement provision of the Act to allow citizen groups to go forward with their lawsuits based on allegations of violation.

Honolulu went to trial in 1993 for a violation that occurred in 1989 and never occurred again. The Court determined that allegations of a violation were enough to keep the case in court, even though the citizen group was never able to prove another violation of the same nature and that no harm was caused to the ocean or public health.

The Clean Water Act's objective should be to encourage permittees to take mitigative measures to prevent violations, not to encourage costly litigation.

The City and County of Honolulu has presented to this Subcommittee, a package of proposed amendments to the Clean Water Act. It contains references to the key points I have outlined here, but it also appeals for changes in other provisions of the Act including: 1) Criminal prosecution for negligence in operation and maintenance of publicly owned treatment works and 2) Reestablishment of the timetable for stormwater and other municipal discharges.

The current law suggests that a violation of a permit conditions carries criminal sanctions. Regulatory requirements imposed on individuals who have the responsibility for operating and maintaining sewer treatment facilities have become more extensive, strict and complex. A technical violation of any of those requirements presents exposure to criminal prosecution. This is a constant threat regardless of whether treatment plant operations have caused actual harm. The law should be changed to find actual injuries to persons or property damage. Furthermore, the Clean Water Act already contains provisions for "knowing violations" and "knowing endangerment" which are more than adequate to deal with polluters in a criminal context.

Also, it needs to be pointed out that cities such as Honolulu are exposed to potential lawsuits at the risk of millions of dollars regarding compliance with the stormwater provisions of the Clean Water Act.

EPA's implementation of its stormwater regulations was not synchronized with the deadlines established in the Clean Water Act. Although there existed a statutory requirement to regulate stormwater in the clean Water Act, EPA was unable to promulgate the regulations establishing the procedure for the stormwater requirements. This has left cities in an impossible situation, without the means to comply with the Clean Water Act and its deadlines for stormwater requirements. Ultimately, cities are vulnerable to costly litigation. Violations of stormwater requirements carry a high price tag -- \$25,000 per day per violation. This situation needs to be corrected.

In closing, we stress that we not lose sight of common sense. The current law makes dealing with life and property threatening emergencies impossible. For example, if

firefighters are to extinguish a burning truck on the road, must they be forced to first get a permit because liquids may get into the storm system? Or do they do their job and risk facing jail time because getting a permit would mean losing lives? What about an airline accident? Should the firefighters wait to process the documents before they save lives? Or do they go to jail because they've broken the black letter of the law? What about the common occurrence of dewatering when sewer lines break, which is not unusual. What do City employees do in these emergency situations, when faced with the choice of having to obtain a permit or going to jail? If any of you doubt what I am talking about, then I invite you to talk to any of our people who work daily in the areas affected by the Clean Water Act.

On behalf of Mayor Frank Fasi and the people of the City and County of Honolulu, I thank you for your kind attention to our testimony. We hope this Subcommittee will consider our requests and proposals for amendments to the Clean Water Act.

CWA-TESTIMONY



September 17, 1993

The Honorable Max Baucus
 Chairman
 Senate Committee on Environment & Public Works
 SD-456, Dirksen Senate Office Building
 Washington, D.C. 20510-6175

In Re: Clean Water Act Amendments / Enforcement
 Proposal to reinstate provision to impose
 retroactive penalties via Citizen Suits
for corrected exceedances of permit limits

Dear Mr. Chairman:

The Independent Liquid Terminals Association, is an international trade association which represents 87 companies with more than 400 domestic for-hire bulk liquid terminals that operate in 44 states, Puerto Rico, and the District of Columbia. These companies range in size from as small as 10,000 bbls. of storage capacity to those with 5 million bbls. or more of storage capacity.

ILTA Member for-hire terminals are different than facilities owned by an oil and chemical companies which own and market those products. For-hire terminals do not own the products stored at the facilities. Instead they lease storage tank space to product owners and earn their total revenue from this service to product owners.

Issues of Concern

Among the issues ILTA is concerned with are the following major issues:

1. Retroactive law suits are historically revisionist, imposing today's environmental and equipment standards for regulatory situations which occurred as far back as 10 or more years ago.
2. The huge retroactive financial penalties imposed are unrealistically based on percentages of chemicals discharged when in fact, the actual volumes discharged are minuscule.
3. The retroactive financial penalties are unrealistic in other ways. Failure to make purely technical and routine statements in permittees monthly reports have been treated as major environmental violations.
4. These retroactive law suits and financial penalties can bankrupt a company, particularly small and medium size companies and result in unemployment and loss of a productive business.
5. Since the Clean Water Act stacks the law in favor of those bringing the retroactive law suit, defending such a suit appears to be futile. Therefore, alleged violators feel that the retroactive law suits are used as environmental blackmail to force a less-expensive settlement with the plaintiffs.
6. Retroactive law suits brought for past violations which have been abated and corrected do not bring a company into compliance -- that company is already in compliance -- the suit is brought only because the law allows those bringing it an easy way to extract money from a business.

(more)

INDEPENDENT LIQUID TERMINALS ASSOCIATION
 1133 15th STREET, N.W., SUITE 650
 WASHINGTON, D.C. 20005 • 202-659-2301

Issue 1: RETROACTIVE LAW SUITS ARE UNFAIRLY REVISIONIST

Retroactive citizen law suits represent a revisionist legal approach in that they are a structured effort to go into the past and redress permitted water discharge violations by measuring them against today's standards, experience, equipment capability. Today, vast improvements in technology, modernization of facilities, and better water treatment practices have improved the water discharges to the point where they meet EPA's requirement that the water discharged be cleaner than drinking water.

Since equipment and devices that measured chemicals in extremely minute quantities as parts per million or parts per billion were not that accurate, regulatory agencies in the past, including the State of New Jersey, allowed permittees to a gray area tolerance level -- an exceedance slightly above the permit level. The regulatory agencies sent warnings instead of imposing fines, and advised permittees to bring their discharges within permitted levels. Only if the discharge exceeded the grey area limit would the regulatory agency impose a fine.

Now, revisionists would go back into time and demand that companies be fined and penalized millions of dollars for yesterday's violations based on today's advances in equipment, improvements in operating practices, and in changes of regulatory agency philosophy.

Issue 2: RETROACTIVE FINANCIAL PENALTIES SHOULD NOT BE BASED ON PERCENTAGES OF EXCEEDANCES

For example, if a permit requires that a company discharge no more than 4 parts per million of a particular chemical, and a company's discharge is 6 parts of the chemical per million of parts of water, this is a 50% violation of the permit limit. If the exceedance is 8 parts per million, then the violation would be 100% of the permit limit. However, the actual volumes of chemicals discharged are minuscule. With a 4 parts per million permit level, a facility would have to discharge 250,000 gallons of water to yield one (1) "accumulated" gallon of the chemical pollutant being regulated.

Thus, basing a penalty on the exaggerated perspective of "percentage of the permit level exceeded" is a grossly unfair method of measuring an appropriate penalty. Also, when dealing with parts per million, or parts per billion, imposing such huge penalties on such small total volumes of chemicals discharged is equally misleading and unfair.

Issue 3: THE ABSENCE FROM PERMITTEE'S MONTHLY REPORT OF PURELY ROUTINE STATEMENTS SHOULD NOT BE MAJOR VIOLATIONS

Discharge reporting must comply with all applicable federal, state, and local laws, regulations, and requirements. For example, a Sanitary Sewage District required that all dischargers report any discharge of petroleum including any sheen on the water. A permit holder was charged with a major penalty for a failure to declare in its report on a permitted discharge of a particular chemical (at 5 parts per million parts of water) which had traces of petroleum in it, that the permitted discharge resulted in "... a sheen on the water."

In this instance, the person making the report was unaware that the 5 parts per million of chemical would yield traces of oil. Whether 5 parts per million resulted in a visible sheen upon the water is pure conjecture although technically the oil may have been present even though not visible. To resort to imposing high fines for such technical violations undermines the permittees confidence and trust in the fairness of the regulatory and judicial systems.

(more)

Issue 4: RETROACTIVE LAW SUITS CAN BANKRUPT A NOW-COMPLYING COMPANY

A company which has invested in pollution control equipment to bring its permitted discharges into line with its permit levels can be bankrupted by retroactive law suits for past corrected violations. This is particularly true of the service industries which earn a much lower amount of revenue than do product manufacturers which earn their revenue from the sale of products.

For example, the costs and penalties associated with defending such a retroactive citizen's suit can result in a minimum of \$5 million and upward to cover attorneys' fees and penalties. Consequently, a formerly financially healthy company, now in compliance, and providing jobs and paying local, state, and federal taxes, may be forced into bankruptcy or put on the brink of financial disaster. They may never be able to recover. Such suits can put small and medium-size companies out of business.

The loss of jobs and taxes seems to be a huge social penalty for society to absorb, particularly for companies that have subsequently achieved compliance with their permit requirements.

Issue 5: THE NATURE OF THE RETROACTIVE LAW SUIT UNDERMINES THE CONFIDENCE OF THE PERMITTEE IN THE REGULATORY AND JUDICIAL SYSTEM

Generally, the experience yielded from attempting to defend against retroactive citizen law suits under the Clean Water Act is to settle the suit with the plaintiffs. But industry does not view it as a settlement, but as an action under the law that allows the plaintiffs to twist the defendant's arm until the defendant agrees to pay off the plaintiff. These appear to be similar to the shareholder takeover battles -- the greenmail law suits in the commercial arena -- and we have seen what a devastating financial impact they have had on corporations. While proceeds from settlements have been delegated to fund projects of environmental groups, any benefits from funding such a project as a hiking trail, are more than offset by loss of jobs and taxes, and government payouts to people who become unemployed as a result of such suits.

Issue 6: EXPENSIVE RETROACTIVE LAW SUITS FOR PAST BUT CORRECTED VIOLATIONS DO NOT BRING INTO COMPLIANCE A COMPANY THAT IS ALREADY COMPLYING

The plaintiff "environmental" groups that bring retroactive law suits against companies that have abated and corrected past violations are not performing a useful citizens' service.

Most companies in recent years have come into permit compliance because two parallel forces have emerged. The states have been doing a better job in urging compliance with permit requirements by threatening not to renew permits until deficiencies are corrected at a facility, and better water treatment equipment and practices have enabled the companies to maintain operations within permit limits.

Thus, companies with past corrected violations now ask, "How can a retroactive law suit for a past violation bring us into compliance? We are already in compliance." They ask, "How can taking money out of our pockets and placing us in a precarious financial position serve to improve water quality?"

The retroactive law suit against past abated and corrected violations is a dangerous practice and should not be allowed to creep back into the law. The better approach is to improve state inspection of facilities and state enforcement of the water laws. All law suits of merit should be prosecuted by the state. The state should not have to rely on citizen organizations to prosecute them. It smacks of "vigilantism" and it got out of control in the past. The Gwaltney case decision and other court decisions should not be overturned to allow retroactive law suits.

Citizen suits should be restricted to actions for continuing repeated violations and not violations that have been abated and the conditions causing them corrected.

(more)

Other Issues:

7. ILTA supports the existing 3rd Circuit Court decision that require plaintiffs to show that the defendants discharged a pollutant which causes or contributes to the kinds of injuries alleged by the plaintiffs.
8. ILTA believes that plaintiffs in a citizen suit, among other things, should continue to be required to show in court (a) an actual injury in fact that (b) is directly traceable to defendant's conduct. Plaintiffs should be required, to show to a scientific certainty that defendant's discharge was a pollutant that caused the plaintiff's injury.
9. The definition of "citizen standing" should not be broadened. To broaden it any further would make it meaningless as a factor a court would have to consider when a citizen's suit is brought.
10. Citizen suits, current or retroactive, should not be allowed for discharges to publicly-owned treatment works (POTW's). POTW's have their own methods for controlling dischargers of pollutants, for treating pollutants, for prohibiting improper discharges, for requiring pretreatment of discharges, or and for charging fees for the treatment of discharges.

Conclusion:

The Independent Liquid Terminals Association believes that retroactive citizen suits have much potential for abuse and that their use has been much abused in the past. Permit holders who have abated their past violating discharges and who have corrected deficiencies leading to these violations should not be subject to retroactive citizen suits.

Citizen suits should be limited to continued and repeated violations only. Allegations by proponents that "all a violator need do is stop exceeding its permit level once it becomes aware that it might be subject to a citizen's suit defeats the suit," is incorrect. Further, allegations by proponents that a permit violator can then continue to discharge in exceedance of the permit limit is also incorrect. Such activity would convince any court that the discharges in excess of the permit limit have not abated, that the deficiencies causing them have not been corrected, and that the violations are current.

Further, citizen groups that want to act as a watch dog for the state regulatory agencies can provide the state prosecutor with the information and evidence about current violations. State and federal agencies have the power through injunctions to halt operations by those who discharge in excess of permit limits. They can require the discharger to correct the deficiency.

We should not encourage retroactive citizen suits. These suits are brought against companies who voluntarily and honestly reported on a monthly basis their discharge levels to the state regulatory agencies. Because companies have done much to keep their permitted discharges within permit limits, their are fewer opportunities to bring citizen suits against permittees today. However, past records of violations sit in regulatory agency files like ducks in a barrel.

Proponents of retroactive citizen suits, with their proposals to amend the Clean Water Act, are simply asking the Congress to make it easier to pick off sitting ducks. This should not be allowed. The amount of money sued for far exceeds any revenue any company may have saved whenever it exceeded a permit limit. Most of the permit violations were not willful. The EPA system is structured so that a company will be within permit limits about 95% of the time. Companies are usually within permit limits more than 95% of the time. (See Chemical Manufacturer's Association for how the system works.)

(more)

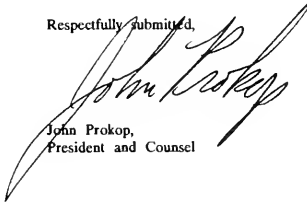
ILTA Comments on
the Clean Water Act
Retrospective Penalties/Citizen Suits

- 5 -

September 17, 1993

Only companies with past violations and current assets (money) are sued. Companies with past violations and no money are not sued. These sitting duck suits neither benefit the environment nor the national welfare and economy. This abusive and disreputable practice should not be countenanced by the Congress. It has no place in the Federal Clean Water Act.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John Prokop". The signature is written in a cursive style with a long, sweeping underline that extends to the left and then loops back under the name.

John Prokop,
President and Counsel

cc: ILTA Board of Directors



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Marina Operators Association of America

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Statement of

Mr. Bob Giesler
President

Marina Operators Association of America
150 E. Huron, Suite 802
Chicago, Illinois 60611

before the

Subcommittee on Clean Water, Fisheries, and Wildlife
of the
Committee on Environment and Public Works

U.S. Senate
Washington, D.C.

Re: S. 1114, the Federal Water Pollution Control Act of 1993

August 12, 1993

Statement of Bob Giesler
President of the
Marina Operators Association of America
before the U.S. Senate
Subcommittee on Clean Water, Fisheries, and Wildlife
on S. 1114, the Federal Water Pollution Control Act of 1993

Thank you and good morning, Mr. Chairman and distinguished Senators. I am Bob Giesler, President of the Marina Operators Association of America and a marina owner/operator in South Haven, Michigan for 14 years. I am also a Board member of the Michigan Boating Industries Association.

MOAA is the national trade association of small businesses which provide marina services and waterway access to our nation's boaters. Our members include large multi-marina owned conglomerates, concessionaires on Army Corps of Engineers lakes, small individually or family owned marinas, dry stack storage facilities, service yards, and support services, such as manufacturers of boat docks and boat access ramps. However, the far majority of our members are the small, family owned marinas with fewer than 100 boat slips.

The strength of our organization is that MOAA members maintain frequent contact with recreational boaters. We perform service and maintenance work and sell and install accessories. Boat owners store their boats on our properties either in dry storage or docking facilities. Some even use our access ramps. Boaters tell our members what's on their minds; and, because our members are market driven, we strive to satisfy their concerns.

We greatly appreciate the opportunity to present testimony for the record on S. 1114, the Federal Water Pollution Control Act of 1993, more commonly called the Clean Water Act in our industry. We also commend your leadership and the interest of the Subcommittee in holding the weekly hearings this summer on Clean Water Reauthorization.

Under the leadership of the MOAA Board of Directors, our industry recognized the need for clean water to promote recreational boating. We believe boaters want to recreate on clean

water and anglers want to fish in clean waters. As such, the MOAA Board cosponsored a Washington conference called "Boating on Clean Water" on April 4 and April 5, 1993. The conference was also sponsored by the Marine Retailers Association of America and the Northwest Marine Trades Association.

Panelists from key clean water government agencies, such as the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the U.S. Coast Guard, the U.S. Army Corps of Engineers, and the Department of the Interior joined with Hill Committee staff, and representatives from the boating industry, environmental groups, and boating consumer organizations to review the direction policy makers are going regarding clean water. It became very clear at the conference that the boating industry wants to work with environmentalists and policy makers for the common goal of cleaning our waters.

Subsequent to the successful completion of the "Boating on Clean Water" conference in Washington, MOAA scheduled other conferences in Atlanta in August, in Chicago in September, and in Las Vegas in November. We are attempting to bring the excellent discussions of the national "Boating on Clean Water" conference to our membership and to inform key State and Federal government agencies about who and what our industry is at the local and regional levels. It is important that our industry and regulatory agencies understand what it is we can do to comply with Congressional intent and direction on Clean Water.

MOAA also formed a "Clean Water Reauthorization Committee" with membership from recreational boat dealers, marina operators, state boating regulatory agencies, and boat manufacturers to analyze S. 1114 and other bills introduced in Congress on Clean Water. Our committee met and drew an immediate consensus that recreational boating is dependent on clean water for recreational activities and abundant fish and wildlife resources for continued strength and economic growth.

Our members strongly support the intent of S. 1114 in its goal of attaining economically achievable solutions to the clean-up of our nation's waters. We support S. 1114, but ask consideration be given to certain questions, concerns, and recommendations very important to our industry.

The marina industry is a very special industry, because our members work, live, and recreate on the water. The vast majority of people in our industry invest in marina businesses because of a love of our water resources, including boating and fishing. However, the marina and boat yard industry, which is characterized by small, family owned and operated businesses, has an acute sensitivity to economically achievable pollution prevention measures. Environmental regulations must be subject to cost benefit analysis and technological feasibility. Our members want clean water, but there is also a fear of what, as small businesses they can afford to pay or pass on to boating consumers in increased

fees for services. What will the market bear without going out of business?

We are pleased with the general intent of S. 1114 regarding the references to the importance of "sound science and sound economics" and the acknowledgement of the financial burdens the Clean Water Acts of 1972, 1977, 1981, and 1987 have imposed on State and local governments. We ask that the committee also recognize the difficulties small business may have in complying with certain far reaching and broad provisions of the rewrite.

In particular, MOAA asks that Title I, Section 101 be amended to allow private marinas and boat yards to utilize State Revolving Funds or low interest government backed loans to assist with the installation of sewage pump-out stations, porta-potty dump stations, and boat washing wastewater treatment systems. Specifically, we request that section 603 (33 U.S. Code 1388(c)) be amended to read "(c)(1)(J) Constructing sewage pump-out stations, porta-potty dump stations, and boat washing wastewater treatment systems approved pursuant to sections 304, 312, and 319."

Another major concern with S. 1114 is the lack of financial accountability in section 201 in Title II regarding States authority to collect fees to administer and finance State water quality environmental programs. We commend the bill for requiring funds collected from applicable fees be used only by States to finance improvements in water quality. However, the bill lacks any requirement for efficiency and effectiveness in a State managed program. Without such safeguards, our fear is that programs of run away fee increases to orbital amounts similar to what has happened in Florida and Washington state will significantly impact marina operations. When a State ceases to look at fees as an offset to the cost of administering a well-managed program and begins to use fees as a sole funding source then fees become a tax and the cost of doing business will go unchecked. The boating industry will suffer with increased unemployment and a reduced capital basis.

We recommend a fee cap of \$500.00 to \$1,000.00 per permit.

We commend the committee for section 302 of Title III regarding the creation of a comprehensive watershed management program. We believe this approach to the prevention of pollution is sound, because it will bring point and non-point source reduction together. We have a deep concern a lack of consistency from marina to marina could result as each watershed management team drafts individual regulations for each watershed. With different rules, practices, fees, and requirements, boat yards in one watershed would not be able to offer services similar to one in another watershed. These differing marina services would result from differing fees and more expensive pollution abatement requirements. Unfair competitive advantages would result, and new concentrations of boats in areas providing "better" services could cause safety and congestion problems.

Section 304 of Title III requires the Environmental Protection Agency to create a National Program Guidance which would be very similar to the recent Nonpoint Guidance Manual implemented under the Coastal Zone Management Act. Representatives from our industry worked closely with the National Oceanic and Atmospheric Administration to develop a program which would work in waterfront marine facilities and also meet the intent of Congress. Problems continue to exist in this regard. With two different and sometimes conflicting programs for our members to comply with, those problems will multiply. We strongly prefer a single program. However, if Congress continues to support two programs in S.1114 with a dual EPA and NOAA approach, we ask that the interests of our industry be considered in the rule making process to simplify and clarify our ability to comply with the Clean Water Act.

Because our industry consists of small businesses, our members do not have the luxury of employing staff and lawyers to review regulations and learn how to comply to regulations, even though our members want to and will be required to under law. Title V contains a provision which we ask be expanded regarding education. An industry peer education program is needed to inform and educate people in the recreational boating industry as to their environmental responsibilities prior to being subject to the \$5,000.00 field citation in section 503. Section 519, "Clean Water Education," is ideal for the inclusion of the National CleanMarina Program. This program is a three year national nongovernment initiative proposed by a consortium of environmental organizations, boating consumer groups, Sea Grant Colleges, State and Federal government agencies and Departments, and the boating industry to help reduce incremental pollutant levels from marinas and recreational boat operations. It is a pro-active program in every state to assist through education only the marina industry and boating public to become more environmentally compatible.

MOAA strongly supports the CleanMarina program and asks that S. 1114 be amended to authorize this very important and much needed program to significantly reduce water pollutant levels coming from boating and marina operations, to accelerate the accomplishments of the Clean Water Act, to reduce the compliance costs of the industry, and to educate the boating public regarding sound environmental practices.

To conclude, MOAA congratulates you on your efforts to clean the water. We look forward to working with you and staff.

Thank you Mr. Chairman.



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August 11, 1993

The Honorable Max Baucus
Chairman, Committee on Environment and Public Works
SD-456 Dirksen Senate Office Building
Washington, D.C. 20510-6175

Dear Mr. Chairman:

I am writing to ask that this letter be included in the committee record of the hearings held on S. 1114, the Federal Water Pollution Control Act of 1993, in the past couple of months in the Subcommittee on Clean Water, Fisheries, and Wildlife.

The 3,500 members of the Marine Retailers Association of America greatly appreciate this opportunity to submit written comments on S. 1114 and commend your leadership for reauthorizing this important legislation.

MRAA is the national trade association of small businesses which sell and service recreational boats and operate marinas. Our members come from virtually every state in the country, and MRAA is closely aligned with 119 regional, state, and local marine trades associations.

There may be no other industry so closely associated with the marine and water environment as we are. Our members work on the water, many times live on the water, and recreate on the water. People usually get into our business because of a love of water recreation and the outdoors. It is an industry with small margins and low profitability, but one that provides a great amount of personal satisfaction.

Our members consider themselves to be environmentalists and environmental preservationists. We strongly recognize the need for clean water to promote recreational boating. And, because a large percentage of our customers purchase and operate recreational boats for fishing, we support programs to protect and enhance fisheries and wildlife management. We are deeply concerned about the reducing fish populations in rivers, lakes, and along the coastline. Our members and customers want to recreate on clean water and want to fish in clean waters. The recreational boating industry is very dependent on clean water for continued strength and economic growth.

Because of our love of a clean water environment, we strongly support S. 1114. Our membership, however, is very concerned about the economic cost of uncontrolled

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August 11, 1993

federal and state regulation in this regard. It is important to us that Congress and regulatory agencies understand our industry and what we can do, both financially and technologically, to comply with Congressional intent on clean water.

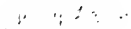
The recreational boating industry, which consists primarily of small, family owned and operated businesses, is very sensitive to economically achievable pollution prevention and clean up measures. We commend your leadership in this regard and agree with the intent of S. 1114 regarding the frequent references of "sound science and sound economics." Environmental regulations must be subject to cost versus benefit analysis. With strong Congressional interest to reduce the deficit and reduce government spending at the same time of increasing expenditures for environmental preservation, we believe Congress should establish priorities to clean the water. Secondary polluters, such as the boating industry, certainly need to be addressed, but emphasis should be on getting the biggest bang for our hard earned tax dollar.

S.1114 was sensitive to the difficulties state and local governments have in complying with prior versions of the Clean Water Act. We ask that the committee also recognize the difficulties small businesses may have in complying with the current rewrite. In particular, our members need to understand just what it is they need to do to comply with the Clean Water Act and subsequent regulations.

MRAA has been a participant with environmental organizations, boating consumer groups, Sea Grant colleges, State and Federal Agencies, and other boating industry groups in an effort to educate small businesses in our industry and therefore we cosponsor the CleanMarina program. This is a non-governmental initiative proposed to reduce incremental pollutant levels from the boating industry and recreational boaters. We believe this program is a proactive program by a consortium of many groups which play an important role in developing the technical information so badly needed and the education programs to accelerate the accomplishment of the Clean Water Act. It is important to note that this program is an educational program only and all capital improvements made to boating facilities will be paid for by the industry. We ask that the rewrite of S. 1114 contain language authorizing this program for the Environmental Protection Agency to administer.

Again, we thank you for your leadership in reauthorizing the Clean Water Act and ask that you or your staff contact us for assistance, if needed.

Best Regards,


Jerry Larsen
President

**MWD**

METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

August 31, 1993

Office of the General Manager

Honorable Bob Graham
Chairman
Subcommittee on Clean Water, Fisheries and Wildlife
Senate Environment and Public Works Committee
456 Dirksen Senate Office Building
Washington, D.C. 20510

Dear Senator Graham:

Submittal of Clean Water Act Testimony

The Metropolitan Water District of Southern California (Metropolitan) is very interested in the reauthorization of the Clean Water Act (CWA), and we have prepared a CWA position statement which addresses issues of concern to public drinking water suppliers. The purpose of this letter is to submit to you Metropolitan's position and recommended CWA amendments for the reauthorization of the CWA, and to request that they be incorporated into the CWA reauthorization hearing record for the Subcommittee on Clean Water, Fisheries and Wildlife, Senate Committee on Environment and Public Works.

Metropolitan is a special district created by the California State Legislature in 1928 to provide supplemental water for cities and communities on the coastal plain of Southern California. Metropolitan's service area includes in excess of 160 cities and has a combined population of over 15 million. To provide this service, Metropolitan operates an extensive system of drinking water conveyances, reservoirs, and water treatment plants.

Metropolitan's traditional supplies are currently obtained from the Colorado River through the Colorado River Aqueduct and from Northern California through the State Water Project's 444-mile-long California Aqueduct. Metropolitan also has worked with its member agencies for years to develop other sources of supply through reclamation of wastewater, clean-up of contaminated groundwater, conservation of agricultural water, and desalination of brackish water and seawater.

As a prelude, your Subcommittee should be aware of the dramatic increase in regulatory activity in recent years directed at the Nation's drinking water providers. Under the Safe Drinking Water Act (SDWA) Amendments of 1986, drinking water purveyors have witnessed the number of regulated contaminants

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increase from about 20 to over 80 contaminants which are currently regulated. Regulations for microbiological contaminants, filtration and disinfection of surface water, disinfection of groundwater, disinfection by-products, radionuclides, and a large number of organic and inorganic contaminants are in development or have been proposed or promulgated. In addition, treatment requirements constrain our operational flexibility to the point where it is no longer possible to tolerate the continued degradation of our basic sources of supply. **Preventing contamination of source waters must be stressed.** We believe the opportunity is now at hand to provide the mechanism by which policy makers can ultimately weigh pollution prevention costs against the costs of the traditional "end-of-pipe" treatment approach now in place in our Nation's water utilities.

The following CWA position statement focuses on significant drinking water quality problems which exist in the Nation's surface water bodies, and on suggested amendments to the CWA which address these drinking water concerns. The three major issues of concern to Metropolitan are:

1. The need for increased source protection for public drinking water supplies;
2. The need for representative monitoring of point source and agricultural discharges to surface water drinking water supplies; and
3. The need to facilitate the reuse of wastewater.

I would like to first provide you with background on these issues and then summarize our suggested CWA amendment language to deal with these problems. The attached draft provides suggested CWA amendment language that Metropolitan has developed concerning the reauthorization.

Statement of the Problem

Despite significant progress in water pollution control over the past twenty years, serious water quality problems persist, especially in surface waters which provide drinking water for 65% of the Nation's population. According to the U. S. Environmental Protection Agency's (USEPA) 1990 Water Quality Inventory Report, 56% of assessed lake acres and 37% of assessed river miles are threatened by sources of water pollution or do not meet water quality standards to support designated uses. The leading causes of impairment for rivers and lakes include nutrients, organic enrichment, metals, pathogens, and suspended solids. Agriculture was reported to be the leading source of pollution in both rivers and lakes. Clearly, point and nonpoint

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sources of water pollution impact the quality of surface waters which serve as direct sources of drinking water; however, the extent of these impacts is not well understood.

Drinking water regulations such as the USEPA's Surface Water Treatment Rule are prompting water utilities to become increasingly concerned about pathogen levels in source waters. In addition, published results from recent pathogen monitoring studies show that higher pathogenic organism densities are found in drinking water source waters receiving industrial or sewage effluents. These results indicate a risk to drinking water supplies.

The extent of the impact of combined sewer overflows or even secondary treated wastewater on downstream water suppliers is largely unknown. Wastewater treatment plants are currently required to monitor for fecal coliforms in their discharges to provide some measure of the sanitary quality of the discharge. However, this measure is clearly inadequate because there is no relationship between the absence of fecal coliforms and the absence of pathogens of drinking water concern (e.g., Giardia, Cryptosporidium). This encourages a false sense of security on the part of all. Data from the literature suggest that secondary treated wastewater effluent may contain from approximately 6,000 to over 100,000 cysts of Giardia per liter. Secondary treated wastewater is commonly discharged to the Nation's surface waters, yet no one is monitoring its affect on drinking water supplies. The science is clear and so should be the policy. Such pathogen contaminated discharges from either wastewater treatment plants or livestock operations could quite easily overwhelm a water treatment plant. The result will be outbreaks of waterborne disease.

The recent Cryptosporidium outbreak in the drinking water supply in Milwaukee, in which thousands of people became ill, clearly illustrates the importance of this issue. Although the source of the Cryptosporidium outbreak remains unknown at this time, this incident illustrates the need for increased monitoring of drinking water contaminants in potential point and nonpoint source discharges to surface waters serving as public water supplies.

The Milwaukee incident is not unique. Other significant Cryptosporidium outbreaks have been reported during the past decade in Carrollton, Georgia and Medford, Oregon. Furthermore, the Centers for Disease Control (CDC) reported 525 microbial disease outbreaks related to public water supplies from 1972 to 1988, affecting over 131,000 people. The CDC estimates that the actual number of water-borne disease outbreaks is much

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greater than that reported. Despite the documented occurrence of water-borne disease outbreaks, the fact remains that very little has been done to understand where water-borne pathogens come from and whether source control makes more sense than retrofitting the Nation's drinking water treatment plants with sophisticated and expensive technology.

An additional water quality concern for drinking water suppliers is the impact of agricultural discharges on surface water drinking water supplies. Return flows from irrigated agriculture and surface runoff from fields and cattle feedlots can contribute pesticides, nutrients, inorganic contaminants, pathogens, and suspended solids to the receiving water body. The results of recent surface water monitoring studies in the Midwestern United States have indicated widespread contamination of streams and rivers with commonly used herbicides, and in some cases the herbicide levels exceed drinking water standards. The Missouri River Public Water Supplies Association conducted an intensive monitoring study of the occurrence of pesticides in the Missouri River during May through July 1991. The herbicide atrazine was detected in 75% of all the samples, and in 32% of the samples atrazine occurred at concentrations exceeding the drinking water standard.

In California, agricultural drainage is a major concern for public water suppliers whose source of supply is the Sacramento/San Joaquin River Delta (Delta). Agricultural drainage from high organic content soils in the Delta contributes about half of the total organic carbon which occurs in the Delta. This organic matter serves as precursor material for the formation of disinfection by-products in treated drinking water. These agricultural discharges are currently dismissed as a drinking water treatment problem.

Metropolitan's source water supplies experience similar vulnerability to contamination from point and nonpoint sources of drinking water pollutants as those water bodies discussed in the previous examples. As a result, the drinking water quality issues presented are of concern to us and our member agencies in Southern California.

Public water suppliers must comply with drinking water standards for a large number of contaminants; however, drinking water quality problems cannot always be taken care of at the drinking water treatment plant with the installation of more advanced treatment technology. The reasons for this are as follows:

1. No drinking water treatment technology is mistake proof;

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2. Some advanced treatment technologies have adverse environmental consequences associated with their use;
3. For many waters, advanced treatment technologies are not cost-effective for removing the contaminants; and
4. Removing small amounts of contaminants from large amounts of water can be more costly than removing large amounts of contaminants from relatively small amounts of water.

Additionally, dischargers of the drinking water contaminants discussed above currently bear no responsibility for the public health effects of their discharge.

Amending the CWA to Protect Drinking Water Sources

Metropolitan believes the CWA should protect drinking water quality at the source. We believe that the Congressional Declaration of Goals and Policy of the CWA should be amended to specifically include protection of public drinking water supplies as a goal of the Act. The CWA must provide the same status for human health needs, through drinking water supply protection, as it does for protection and propagation of fish, shellfish, and wildlife, and recreation in and on the water. The CWA needs to send a strong signal to the States that drinking water quality is important.

Public drinking water supplies require clear and separate protection under the CWA since there are source water quality concerns specific to drinking water, and due to the need for drinking water purveyors to comply with increasingly stringent Federal drinking water regulations and to provide water that is safe to drink. While some drinking water regulations adopted under the SDWA emphasize source water protection, there is no clear statutory authority to implement this goal.

Monitoring Drinking Water Contaminants in Point-Source and Agricultural Discharges

Current point source monitoring requirements in the CWA are not specific enough with respect to public drinking water supplies. Metropolitan believes that additional monitoring requirements for unregulated pollutants of human health concern are necessary in order to better understand the sources of drinking water contaminants and the impact of point source discharges on drinking water quality. We recommend that the CWA be amended to require the USEPA to develop regulations that require monitoring of such discharges where there is a reasonable basis to believe the discharge is a source of a contaminant impacting a downstream drinking water supplier. The purpose of the additional monitoring requirements is to develop a better

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understanding of the source of specific water pollutants, and to develop a data base on which to base future reasonable regulatory efforts.

Agricultural discharges have been exempt from CWA discharge and monitoring requirements that are part of the NPDES program, and yet we know agricultural discharges directly impact the quality of surface waters designated as public drinking water supplies.

Metropolitan recommends that the CWA be amended to establish a state implemented monitoring program for agricultural discharges. A program for agricultural runoff and return flows should require representative monitoring of such discharges where there is a reasonable basis to believe the discharge is a source of a specific contaminant impacting a downstream drinking water supplier. Such a monitoring program is necessary to identify pollutants contributed by agricultural discharges, and to assess the impact of these discharges on public drinking water supplies. With the information provided by monitoring programs, appropriate best management practices can be developed to minimize, to the maximum extent feasible, the discharge of pollutants determined to impact public water supply source waters. Furthermore, monitoring data will establish a baseline from which to evaluate the success of agricultural nonpoint source pollution control programs.

Beneficial Use of Reclaimed Water

Another issue of great interest to Metropolitan and other public water suppliers in arid regions of the western U.S. is the use of reclaimed wastewater for ground water recharge, agricultural irrigation, landscape irrigation, and various industrial and commercial uses. In Southern California, the benefits of wastewater reclamation include a reduced need for imported water supplies, and a drought-resistant water supply for those situations where reclaimed water can be used.

The use of natural channels of ephemeral or intermittent streams is often necessary to transport reclaimed water to its area of use. Rigid application of strict USEPA water quality criteria for discharges of reclaimed water to ephemeral streams or effluent-dominated water bodies is inappropriate in arid regions and discourages wastewater reuse. The development of site-specific water quality standards where reclaimed water is discharged into effluent-dominated water

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streams, the requisite treatment may be technically difficult and prohibitively expensive. This could preclude the discharge of reclaimed water in the stream entirely in favor of ocean discharge, causing a reduction in streamflows for environmental uses as well as a waste of the resource.

In order to maximize the beneficial use of reclaimed water, Metropolitan recommends that the CWA be amended to:

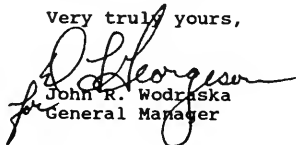
1. Adopt a policy statement allowing states to encourage the beneficial use of reclaimed water as a component of managing water resources and regulating water quality; and
2. Authorize the states to adopt site-specific water quality standards that facilitate the use of reclaimed water in arid regions of the U.S. and the discharge of reclaimed water to effluent-dominated and/or ephemeral streams.

Metropolitan believes that these amendments to the CWA are necessary to facilitate the development of water reclamation projects in our Southern California service area and throughout the western U.S.

Conclusion

The interrelationships of surface water quality protections and drinking water needs are critical to the Nation's public water suppliers, and Metropolitan will continue to focus efforts on these types of CWA issues. Should additional CWA hearings be scheduled by your subcommittee, Metropolitan would be pleased to testify on source water protection issues and other issues of interest to the Subcommittee. If you have any questions or require additional information regarding Metropolitan's views on the reauthorization of the CWA, please contact Mr. Edward Means, Director of Resources, at (213) 217-6412.

Very truly yours,



John R. Wodraska
General Manager

1610



National Association of Home Builders

1201 15th Street, N.W., Washington, D.C. 20005-2800
(202) 822-0200 (800) 368-5242 Fax (202) 822-0559

STATEMENT

OF THE

NATIONAL ASSOCIATION OF HOME BUILDERS

PREPARED FOR THE

**SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
CLEAN WATER, FISHERIES AND WILDLIFE SUBCOMMITTEE**

REAUTHORIZATION OF THE CLEAN WATER ACT

SEPTEMBER 29, 1993

REAUTHORIZATION OF THE CLEAN WATER ACT

This statement is filed on behalf of the 165,000 members of the National Association of Home Builders (NAHB) in response to the ongoing Clean Water Act Reauthorization efforts, as well as the President's plan, "Protecting America's Wetlands: A Fair, Flexible and Effective Approach," and the recently introduced Senate Bill S. 1304, the "Wetlands Conservation and Regulatory Improvements Act."

The President's Federal Wetlands Policy has been touted as fair and balanced, when, in fact, it does not address the fundamental problems and questions associated with the regulation of wetlands. Similarly, while Senate Bill S. 1304 appears to be an effort to provide a compromise between the Edwards Bill (H.R. 350) and the Hayes Bill (H.R. 1330) and many have called it a good starting point for discussion, the bill does not address many of the fundamental problems with the Section 404 program.

This testimony will focus on the basic deficiencies of current wetlands policy, the shortcomings of both the President's wetlands plan and Senate bill S. 1304, and the mandatory provisions that NAHB feels must be addressed within the legislative reform.

THE NATIONAL ASSOCIATION OF HOME BUILDERS

NAHB and its' 800 state and local affiliate builder associations have been heavily involved for many years in clean water policy debates at the federal, state and local levels. Many of our members have been leaders in wetland restoration and preservation projects, stormwater discharge control and management, and pollution prevention for land development across the country.

NAHB is made up of small business people, with over half of our members building fewer than 10 homes per year and close to 75 percent of our members building 25 or fewer homes. These are truly small business people. However, collectively, home building plays a significant role in our nation's economy. The investment in fixed residential structures, in real dollars, is equal to 4.3 percent of our nation's GDP. When you include spending on new residential appliances, carpets and home furnishings, the gross housing output is greater than 7 percent of GDP.

From the outset, let it be very clear that NAHB recognizes the importance and value of our nation's wetlands, and, we want to protect wetlands and our environment. However, the current system for protecting wetlands does not work. It lacks balance between needed protection of wetlands and the environment, the need for economic development and jobs in our local communities, and the protection of private property rights. Furthermore, the current system is a bureaucratic nightmare full of overlapping jurisdictions, costly delays, burdensome confusion and inefficient regulations. Although both the White House Policy and S. 1304 promise

to put an end to these inefficiencies, in fact, they will only serve to perpetuate the status quo.

MAKING THE CURRENT SYSTEM WORK

To address the failures of the current program, shift away from the status quo, and balance the needs of wetland protection and economic development in our local communities, NAHB recommends Congress adopt a comprehensive wetland reform package that would:

- 1) Establish a Congressional definition of a Federal jurisdictional wetland for purposes of Federal regulatory protection under the Clean Water Act and exclude from regulation all land areas which fail to meet a strict three parameter definition of wetlands.
- 2) Focus wetland protection on our nation's most valuable wetlands by classifying all wetlands into three categories and providing regulatory protection accordingly.
- 3) Streamline the current regulatory program by transferring all wetland permit authority to a single federal agency, improving efforts for state assumption of the permit program, establishing enforceable deadlines for permit decisions, implementing an administrative appeals program, instituting a wetland mapping program and requiring that all program regulations and guidelines be subject to public notice and comment.
- 4) Develop an effective wetland mitigation banking system to help achieve the goal of no-overall-net loss of wetlands and, ultimately, to help increase the nation's wetlands resources.
- 5) Protect private property rights by providing for compensation for the landowner who loses the economic viability of his property, as is guaranteed under the Fifth Amendment of the Constitution.
- 6) Streamline government, thereby adhering to the principles outlined for "reinventing government" announced by President Clinton and Vice President Gore.

LEGISLATIVE ACTION IS NEEDED...NOW

NAHB believes the time to implement the above suggestions is now! The Final Report of the National Wetlands Policy Forum, highlighted the needed call to action by saying, the "current regulatory and nonregulatory programs leave much to be desired...in short, current programs are too cumbersome and the responsibilities too diffuse to guarantee anyone -- landowners, the regulated community, conservationists, or even the regulators themselves, consistency, predictability,

timeliness, or effectiveness. It is a system that allows hundreds of thousands of wetland acres to continue to be lost or degraded annually, almost unnoticed, while substantial resources and time often are devoted to determining the fate of a few relatively small acres." As remarkable as it may sound, these remarks were made in 1988 and remain as relevant today as they were then.

CONGRESS NEEDS TO ESTABLISH WETLAND POLICY

NAHB believes Congress needs to reassert itself into this process by establishing the public policy for the protection of our nation's wetland resources. Congress has neglected this responsibility and has left the regulation of wetlands in the hands of judges, administrators and regulators. Indeed, Congress has never passed a piece of wetlands legislation. The program has grown on its own under the authority of the federal government to regulate dredge and fill activities in navigable waters. This has got to end. Only Congress can stop wetland losses by bringing under the regulatory umbrella activities that are destructive to wetlands such as draining, channelization and excavation. Only Congress can end the bureaucratic nightmare of overlapping permit jurisdiction and vetoes by establishing a single permit agency. Only Congress can establish fairness to the permit program by granting applicants appeal rights and reasonable deadlines. Only Congress can put an end to the regulatory gridlock and establish a balanced program.

PUTTING "WET" BACK IN WETLANDS

NAHB believes that a balanced program for wetlands protection requires comprehensive legislative reform of Section 404. The first component of a legislative reform package should be a clear Congressional definition of wetlands.

By defining wetlands, we are not asking Congress to consider every specific criteria for hydrophytic vegetation, hydric soils and wetland hydrology. However, we do believe it is responsible, even necessary, for Congress to establish the definition of what types of lands should be jurisdictional for purposes of the Clean Water Act. In this regard, the Congress needs to establish how wet a wetland should be.

Many argue that the determination of what is considered a jurisdictional wetland is not a policy decision. Contrary to that belief, NAHB asserts that the definition of a wetland cannot be legitimized except by Congress. Recently, Congress reaffirmed its policy decision to exempt prior converted croplands from the federal wetlands regulatory process. This willingness to make policy decisions should be further carried out with a decision regarding the definition of wetlands.

In 1972, when Congress first passed the Federal Water Pollution Control Act, now known as the Clean Water Act, the word "wetland" did not appear because the

regulation of wetlands was not even considered. Congress defined jurisdictional waters as "waters of the United States." Following lawsuits defining what constituted navigable waters, in 1977 the House of Representatives proposed to restrain the reach of Section 404 jurisdiction to navigable waters and adjacent wetlands, with specific definitions of each term (See Section 16 of HR 3199, as reported). The Senate, however, favored delegation of dredge and fill activities to the states without a specific wetland definition. It was thought that by delegating the Section 404 program to the States, each state could protect its wetlands as it deemed appropriate, within guidelines set by the U.S. Army Corps of Engineers (The Corps). The 1977 amendments established that Congress did not intend to use a narrow "navigability" definition but rather something broader. Congress passed the Clean Water Act reauthorization in 1977 without a clear definition of "waters of the United States," no legislative definition of jurisdictional "wetlands," and no explicit authorization to regulate the protection of wetlands.

Congress first needs to establish explicit policy to regulate and protect wetlands. Following that it needs to establish a national policy that defines what types of land should be delineated as jurisdictional under the federal wetlands program. S. 1304 seeks to tackle this problem by codifying the definition of wetlands that has been in use by both EPA and the Corps since 1977. The definition reads,

"those areas that are inundated or saturated by surface water or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, fens, potholes, playa lakes, vernal pools and similar areas."

The inclusion of this definition within the legislation will do no more than to codify the unbalanced regulatory definition that has been in use for more than 15 years. Adoption of this definition will not resolve the debate over what wetlands are deemed jurisdictional under the Section 404 program. In addition, this definition does not specify a duration of saturation, require the presence of obligate wetland species, nor require on site verification of all three parameters. Ignoring these details will further perpetuate confusion and the reigning status quo. Indeed, under this definition, land without any standing water, at any time of the year can be considered wetlands, hence the regulation of millions of acres of "dry" wetlands.

Congress should require that wetlands should actually be wet and accordingly should have independent verification of all 3 wetland parameters (wetland hydrology, hydrophytic vegetation and hydric soils). Congress should also require surface water for 21 or more consecutive days during the growing season. These two changes

would return the regulatory program to regulating the type of land most of us call swamps, marshes and bogs.

NATIONAL ACADEMY OF SCIENCE STUDY

As Congress works to define the types of land subject to Federal jurisdiction under Section 404, it is appropriate to comment on the National Academy of Science (The Academy) study for which Congress appropriated funds in the 102nd Congress. The Academy's Committee on Wetlands Characterization is to produce a report that will review and evaluate the scientific bases of wetlands identification and characterization for management. The report is expected by September 30, 1994.

As we have stated, the Clean Water Act is silent on the definition of wetlands. It was not until the 1977 amendments that wetlands were even mentioned in the statute. In the 102nd Congress, a number of groups, including NAHB, urged Congress to establish in the law the policy criteria for the types of land that should be regulated under the scope of the Federal jurisdiction. Other groups urged Congress to avoid addressing this policy issue stating that further science was needed and they urged a study by the Academy.

The study was proposed, debated and defeated by the House of Representatives by a vote of 181-241. Many lawmakers believed that after 20 years of research and volumes of field data it was unlikely the Academy would discover any new science during a one year study. After all, the 1987 Manual was written after 10 years of research and field testing at a cost of over \$5 million. However, at the close of the session, such a study was included, without hearings or debate, in the Environmental Protection Agency (EPA) appropriations bill. The study was to be completed within one year of enactment and at a cost of \$400,000.

The issue of whether additional scientific or policy criteria are needed was addressed by the Supreme Court in the Avoyelles Sportsmen League v. Alexander case when the court stated, *"It is quite obvious from this history that the term 'waters of the United States' and 'wetlands' are not terms of pure science. They are not meant to be. 'Wetlands' is a jurisdictional term, the product of the legislative process... Thus the 'wetlands' definition does not answer a scientific need, it satisfies a practical, a social, a political need, the need to define the scope of Section 404 jurisdiction."*

For over twenty years scientists have collected data regarding what criteria should be used to determine if land is a "wetland". This has been difficult, however, since different criteria are used in different regions and resource areas. Moreover, different types of land are defined in Federal, state, and local statutes, and their definitions are inconsistent. Further, these laws generally do not define the scientific components necessary to identify specific lands but instead, establish the policy

criteria that justify the regulation of the land.

The accumulation of knowledge and scientific research on wetland delineation makes one fact inescapably clear: there is simply no body of information that will provide easy, certain answers to wetland delineation questions without Congressional action to define the type of land that should be regulated under the Section 404. The NAS study is fundamentally flawed since it has been done backwards. Congress should first make the decision regarding what areas should be deemed jurisdictional wetlands, then a study should be initiated by NAS to establish a manual that adheres to that definitional decision.

The determination of a definition of jurisdictional wetlands is a policy decision that must be legitimized by Congress, not scientists. Congress must decide what it wants to be the limits of federal regulatory jurisdiction.

SCOPE OF REGULATED ACTIVITIES

Section 404 of the Clean Water Act requires permits for the discharge of dredged or fill materials into navigable waters, which the statute defines as "waters of the United States." Following the adoption of a reasonable definition of wetlands, NAHB believes it is appropriate to expand the regulated activities of Section 404 in these areas within the framework of a comprehensive wetlands management plan.

Some believe that all activities undertaken within a wetland require a Section 404 permit. This is wrong. Many activities that are specifically harmful to wetlands are not regulated. A GAO study found that "many activities resulting in substantial wetland losses are not regulated by the Section 404 program." Section 404 regulates only the discharge into wetlands of dredged or fill materials from a point source. Activities associated with home construction generally are included.

The limited scope of the program stems from the fact that Congress intended the 1972 Clean Water Act be a pollution control program, not a wetland regulatory program. Furthermore, it is clear Congress did not mean to regulate activities in wetlands but rather the sources of pollution. In the legislative history of the Act, the Congressional Research Service wrote that Congress focused on the fact that the dredged soil resulting from the creation and maintenance of navigable waterways was often contaminated and concluded that the common practice of disposing of dredged spoil in other areas of the navigable waters ought to be regulated. The limited scope of the Clean Water Act Section 404 program is another reason why Congress should address this issue through reform.

While judicial decisions and law suits have attempted to increase the scope of the permit program, the clear statutory language and legislative history have restricted many such efforts. If our nation's remaining wetland resources are to be managed,

the Clean Water Act needs to be amended to include as regulated activities draining, channelization and excavation. This additional regulatory authority, however, must be balanced with meaningful streamlining measures so that agencies can handle their administrative responsibilities in an efficient and reasonable manner.

Senate bill S. 1304 provides such an expansion, as it redefines the discharge of dredged or fill material to mean,

"any addition of dredged or fill material into navigable waters and includes, without limitation, any addition or redeposit of dredged or fill materials, including excavated materials, into the navigable waters which is incidental to any activity, including draining, mechanized landclearing, ditching, channelization, or other excavation that has or would have the effect of destroying or degrading any area of navigable waters."

Unfortunately, this expansion is not coupled with any provisions to address the bureaucratic red tape and inefficiencies now inherent in the program. Accordingly, NAHB would strenuously oppose the expansion of the program in this manner.

In the same vein, the Administration has incorporated similar expansion through the illegal issuance of the Tulloch Rule as a portion of its wetlands reform package. Although not given the Congressional authority to do so, EPA and the Corps have usurped Congress' authority and published the final rule incorporating such expansion. NAHB believes this act to be so egregious that we have filed suit against the federal government seeking an immediate injunction over the implementation and enforcement of the Tulloch Rule.

Beyond the illegality of the action, however, the implications of this broadened definition are significant. Indeed, the activities it addresses would be irrebuttably presumed to result in the discharge of dredged material, and the discharge would be presumed to cause destruction or degradation of U.S. waters unless the project proponent can demonstrate otherwise. The burden of proof, therefore, is on the landowner to show that no destruction or degradation has taken place. However, it would be virtually impossible to do so as a proponent must evaluate not only the immediate impacts of the dredge or fill activity, but also any individual or cumulative impacts resulting from the entire project, even those activities occurring in non-wetland areas.

Furthermore, the rule goes on to define "destroy or degrade" as "an identifiable decrease in the functional values of the water of the United States." This criteria is unavoidable under virtually any circumstances, making the presumption of destruction on degradation nearly impossible to refute.

NAHB is not categorically opposed to the regulation of excavation and similar activities, in fact, we support it in the context of a more balanced approach. In this regard, NAHB supports passage of H.R. 1330, which would expand the scope of the program, but which also includes initiatives which streamline the process and make wetlands regulations more predictable. The expanded scope of activities must be part of a larger, comprehensive reform of Section 404, whereby the program will progress from solely a pollution control initiative into a wetland resource management act.

SINGLE AGENCY ADMINISTRATION

Congress must address the burdensome, confusing, and inefficient overlapping jurisdictions of the program by the Corps and the Environmental Protection Agency. If the Section 404 program is to be efficient and effective and reformed into a wetland resource management act, then the program must be given to a single Federal agency to administer. This will not only bring efficiency to the program and reduce costs and confusion to applicants, but will place total responsibility and accountability with a single agency. No longer will one administrator be able to point to another and claim that it wasn't their responsibility to promote wetland protection, research new restoration techniques or undertake aggressive mitigation banking to increase the nation's wetland resources.

The problems of bifurcated agency administration go back to the beginning of the program. The Section 404 permit program originated with the 1972 Clean Water Act as a program intended to control pollution from point source discharges of dredged or fill material. During the debate, Congress avoided the decision of who should be responsible for the program by granting the Corps of Engineers permit issuance authority and, the newly created EPA a significant parallel authority to set permit standards and the power to veto specific permits. No agency was charged with the responsibility to educate the public about the importance of wetlands, research efforts to reduce losses, develop proposals to restore these valuable resources, or establish mitigation banks.

As the program evolved, the Corps and EPA too often developed different interpretations of the Act's permitting requirements which resulted in confusion and chaos. Furthermore, the Corps, EPA, Fish and Wildlife Service and the Soil Conservation Service all established different delineation manuals. It became possible for a landowner to get a permit from one agency and, at the same time, be denied a permit by another agency. **No other Federal regulatory program gives more than one agency direct authority over the same permit program.**

Not only has this bifurcated administrative structure lead to interagency disputes and costly inefficiencies, the requirements of the two agencies are often conflicting, and the results are unpredictable. The task of unraveling the conflicting policies and requirements of the two agencies fall upon the property owner.

It is time for Congress to end this administrative gridlock of conflicting policies, lengthy permit review delays, unnecessary permit costs and confusion. With no one in charge, opportunities for public education, research and wetland advocacy are lost in the bureaucratic chaos.

NAHB believes the wetlands regulatory program would be greatly improved by Congress giving sole regulatory authority to a single Federal agency. In this regard, we urge Congress to vest not only the authority to regulate wetlands, but also the mission to protect this nation's wetland resources with the Army Corps of Engineers. To achieve such a goal, we support H.R. 1330, which would grant the Corps sole authority to administer the Section 404 program.

We support giving the Corps this mission because of their extensive network of District Offices and larger field staff, two essential components necessary to run a regulatory program involved in thousands of local permit actions each year. In addition, approximately 40 percent of the permits the Corps processes are for Section 404 and Rivers and Harbors Act Section 10 activities. Because Section 10 authority rests with the Corps it makes additional sense to give sole authority for Section 404 to the Corps.

In stark contrast to single agency administration, both S. 1304 and the White House Policy have taken the opposite track and attempt to expand the number of agencies involved in the Section 404 program. Specifically, S. 1304 allows virtually all federal agencies to get their hands in the permitting process, while the White House Policy advocates making the Soil Conservation Service responsible for all jurisdictional determinations made on agricultural lands. Although both plans seek to end the duplication and overlap of efforts, inconsistency and permitting delays caused by the current structure, the proposed revisions will only serve to exacerbate these problems. The status quo will be maintained.

WETLAND CLASSIFICATION BY FUNCTION AND VALUE

The current regulatory system treats all wetlands equally, even though different wetlands provide different functions and values. As currently constituted, pristine coastal wetlands and man-made drainage ditches are afforded equal protection under Section 404. Although the agencies have not yet agreed on a classification scheme for assessing the functions and values of wetlands, the permit program currently requires an evaluation of the environmental value by the District Engineer at the end of the process. More important, S. 1304 makes no attempt to address wetlands by function and value.

Classification should be the regulatory connection to wetland functions and values. Classification would serve to streamline the permitting process, preserve valuable resource areas and help to legitimize the 404 program by mandating

sensible, understandable and reasonable compliance standards. Classification would change the attention from delineation of hydrophytes and hydric soils, to actual protection of valuable wetlands.

This change in focus can only be achieved, however, if wetlands are considered a managed resource. Wetlands of exceptionally high functions and value to a watershed may merit a management strategy of avoidance. A significantly different watershed management strategy is appropriate for abundant and marginally functional wetlands. This approach focuses on the net-environmental benefit to water resources as opposed to no-net loss of wetland permitting. The fact that classification systems are difficult to establish and administer does not change the fundamental reality that, from an economic, as well as watershed and environmental protection points-of-view, it should be done.

We strongly urge Congress to authorize a classification system for Section 404 wetland resource management. This system will increase regulatory efficiency by providing a framework for decisions and actions. The classification system should occur during an advance identification effort or early in the permit process. This will allow the agencies to focus permit, personnel and enforcement allocations on more critical water resources. It will also reduce uncertainty and inspire new public support and compliance in the permit program.

We would urge the Committee to consider the classification system envisioned in H.R. 1330. H.R. 1330 would establish a three-tier classification scheme for wetlands based on their functions and values. Type A -- those with the highest values -- would be those determined to be critically significant to the long term conservation of the ecosystem in which they are located. Type B wetlands would be those which provide habitat for a significant population of avian aquatic or wetlands dependent wildlife, or provide other wetlands functions including significant enhancement or protection of water quality, or natural flood control. Type C would be those which serve limited wetlands functions and are of least significant environmental value.

Classification as envisioned in H.R. 1330 is a significant environmental benefit for wetland preservation. Under the existing regulatory system, all wetlands are treated as if equal and are given regulatory protection against the discharge of dredged or fill materials. However, under a tiered classification system it would be possible to provide a higher level of protection to those wetlands of the most significant value. Less time would be spent issuing permits for activities in wetlands of marginal value (Type C) and more time spent assuring that the functions and values of higher quality wetlands are protected. Thus, classification would maximize Federal efficiency by focusing attention on wetlands most valuable in protecting water quality.

PERMIT DELAYS

Improving the efficiency of the regulatory system through a classification system is desperately needed as the permitting demands have far exceeded the Federal agencies' resources. One Corps District Engineer wrote to the Corps Headquarters, "We are imposing severe time delays on the public and foreclosing development options on considerable tracts of land. It appears that we have lost our focus on what we are regulating and why we are regulating it."

Former EPA Administrator Reilly recognized this fact when he stated, "The second complaint most frequently encountered from owners of wetlands is, if a person is subject to wetlands permitting regulations, can they expect a decision in a reasonable time?" Indeed, on average it currently takes over a year for a final decision to be made. This is not acceptable.

To address this problem, deadlines for permit reviews must be included in wetland reform legislation. NAHB specifically supports the legislative language as drafted in H.R. 1330, which mandates permit review within 180 days from the date the application is filed. The proposed bill also includes a method by which the mandate will be enforced. Conversely, processing of permits under S. 1304 is designed to occur within 90 days of the date of public notice. Unfortunately, this deadline does not take into account the amount of time it takes for a permit to proceed to the public notice stage, nor the time for a jurisdictional determination to be made. In addition, this mandate is not enforceable as written. A provision should be included which states that if a permit decision is not reached within the 90 day timeframe, the permit is deemed granted.

Concern has been voiced over this "automatic" granting of permits after the deadline date has passed. The agency may, under the pressure of a deadline, make the decision to simply deny a greater number of permit applications than may otherwise occur under a less stringent time frame. This may be the case. However from the landowner's perspective, it is preferable to receive a decision in a swift manner, then make the decision to sue if one so chooses. The less palatable alternative would be to have to wait the average of 367 days to get a decision, then have to begin the appeals process. Expeditious permit processing is vital to the economic viability of a development project and can help to promote more affordable housing.

It should also be noted that the current regulation sets a goal of permit decisions within 60 days, and since S. 1304 provides for a number of exceptions to the 90 day deadline, permit processing could take as long as it does currently. Both S. 1304 and the White House Policy fundamentally ignore the procedural delays and uncertainty that already plague the permitting program.

Firm, enforceable deadlines must be established for both the 404 permit process and requests for jurisdictional determinations.

MAPPING WETLANDS

One of the greatest frustrations for many land owners is the discovery that land they have owned for many years, that appears dry, has suddenly been declared a wetland. It is equally as frustrating to home builders to learn after they acquire land that even though the land has no signs of water, it is considered a wetland.

In these situations the land is not a swamp, marsh or bog. It is usually land that is wet for only a short time each year, with no evidence of standing surface water. The adoption of a more responsible definition of a Federal jurisdictional wetland should eliminate many of these problems by delineating only "wet" wetlands. Regardless, it is time this country invest in efforts to map wetlands to help everyone know where such lands exist.

In most every town, parish or village in America, maps exist showing soil types, flood plains and elevations. Yet, if you were to consider purchasing a site for a new housing development there is no map to which you could refer to determine if the site is a wetland. What better tool to direct development and other regulated activities away from wetlands than mapping?

Many argue that mapping would be expensive. However, the costs of not having maps of wetlands is even greater. Without maps activities are going to accidentally occur in wetland areas. Landowners are collectively going to spend hundreds of millions of dollars on engineering and consulting fees reviewing and delineating wetlands. And, the Federal regulatory program will remain in the dark ages -- struggling to delineate one property at a time, each time an activity is proposed in an area that could potentially be a wetland.

NAHB supports a mapping provision included in H.R. 1330 which would require the identification and classification of wetlands within 10 years after enactment. The mapping project would involve notification to land owners to assure their participation in the mapping process. Preservationists would also benefit as the identification of wetlands would, to the fullest extent practicable, become part of property records in the county, parish or borough in which such wetlands are located, and can be used to identify sites for the establishment of parks or nature preserves. Consequently, S. 1304 contains no provisions for the mapping of wetlands.

As home builders, we carefully review town records and available maps. There is no better form of avoidance for a home builder than knowledge that a site contains a wetland. Mapping is an important tool which can serve to meet the goals of the federal wetlands policy. Mapping should be an integral part of comprehensive

wetlands legislation.

REPLACING THE ALTERNATIVE ANALYSIS

Under the current interpretation of the Section 404(b)(1) guidelines, the key standard in the permitting process is to avoid a regulated activity in a wetland. Permit applicants must provide evidence to convince the Corps that there are no practicable alternative sites available to the applicant and that the applicant has avoided impacts on site to the extent practicable. Unfortunately, neither the Corps nor EPA have issued regulations on how to conduct and document an alternative analysis. When builders attempt to show they have considered all the alternatives, they are often forced to resubmit their applications several times in response to hypothetical alternatives that EPA and the Corps want them to consider.

For example, EPA has said that home builders are accountable for having to evaluate all alternatives, including purchasing non-wetlands sites not owned by the applicant, at the time they "enter the market." Yet, EPA has not defined when an applicant enters the market. Is it when the home builder first sees a "For Sale" sign on a tract of land? Is it when the home builder first discusses the purchase price with the owner, or is it when he/she signs a purchase option agreement? Equal uncertainty exists over the required geographic scope of the search for alternatives. Is it the applicant's market region, or the political subdivision? Is an applicant expected to evaluate alternatives within some region broader than a political subdivision or county? As a result of this lack of guidance, applicants waste time and money responding to hypothetical and often unreasonable alternatives.

The alternative analysis is the single most confusing, time consuming, and problematic aspect of the current 404 regulatory program. Neither S. 1304 nor the White House Policy has proposed a legislative solution that effectively tackles this problem. It is time to take a serious look at alternative methods of assuring minimal effects to wetlands from development activities, as the alternative analysis is clearly not working.

On August 24, 1993, EPA and the Corps distributed a Regulatory Guidance letter pursuant to the White House Policy. This document was intended to clarify the flexibility inherent in the EPA's (b)(1) guidelines, however, it simply restated the policies and procedures already in use.

The best replacement for alternative analysis is useful maps identifying and classifying wetlands.

ADMINISTRATIVE APPEAL

As anyone who has applied for a Section 404 permit knows, the costly and burdensome regulatory permit process is a nightmare of individual decisions, upon decisions, upon decisions. First is the decision of whether the land in question is a wetland -- is the land wet, for what duration, what indicators should be used to relate surface water, should secondary indicators be used, can aerial photographs satisfy the hydrology criterion, or should the squeeze and shake test confirm surface saturation? Then the questions regarding vegetation, soils and exceptions to the Delineation Manual must be answered. Once the land is delineated as a wetland the applicant faces the 404(b)(1) guidelines which involve questions about practicable alternatives for the projects. Finally, the questions must be answered of whether the project will cause or contribute significantly to the degradation of the wetland; whether appropriate and practicable steps have been taken to minimize potential adverse impacts and whether mitigation is appropriate and/or required.

The permitting process involves hundreds of decisions and each and every decision impacts the cost and design of the project. Often these decisions are reached through consultation and cooperation. However, even with small, relatively simple projects, disagreements arise. Some times these disagreements can be resolved. Other times, the applicant is left with few options -- withdraw their application; modify the project and reapply; or, if, and only if the application has been formally acted upon, you have the right to bring suit against the Corps or EPA. At no time does Section 404 provide an applicant the right to an administrative appeal.

Furthermore, the Clean Water Act precludes pre-enforcement judicial review. Applicants are only provided the right to sue the Corps or EPA if their application has been formally acted upon. Consider this possibility: A land owner attempts to build a garage or addition on to an existing home. The Corps claims the land is subject to jurisdiction under Section 404 of the Clean Water Act and requires the home owner to obtain a permit. The applicant wants to challenge this claim. However, because there is no administrative appeal process and the law precludes judicial review unless final permit action has been taken, the applicant must apply for and go through the entire process, in order to appeal the government's claim that their land is actually a wetland. For an application to achieve final permit action, the landowner must submit a request for a permit, agree that the in question is a wetland, complete the 404(b)(1) guidelines and consider mitigation proposal. Only after completing the entire process can the applicant seek judicial review to determine if the land is actually a wetland.

On the other hand, however, if the Corps determines that a property is not a jurisdictional wetland under section 404, a third party may challenge that determination through judicial review. It is inequitable for property owners to have less rights than citizens' groups for challenging jurisdictional determinations - especially on their own property! The appeals process, while intended to protect the

applicant, inadvertently exposes applicants to the scrutiny of preservationist groups, or neighbors, or virtually anyone who might have an interest seeing a project halted.

The outcome of the jurisdictional determination ultimately determines if one must deal with the Section 404 permitting program. The implications resulting from this threshold decision mandate jurisdictional determinations to be made in a fair and efficient manner. Whereas no other federal regulatory program has a comparable dispute over jurisdiction, NAHB believes that the areas regulated under the Section 404 program must be predictable.

The realization of this flaw within the existing regulation is apparent, as provisions for administrative appeals of permit decisions appear in both the President's wetlands policy and S. 1304. Whereas S. 1304 provides for the establishment of rules under which decisions may be appealed, the provision only applies to final permit decisions. In addition, the bill lacks specific criteria under which an appeal may be heard and by whom an appeal may be brought.

The White House Policy is preferable in that it broadens the applicability of the appeals process to include not only permit denials, but also jurisdictional determinations and administrative penalties. There is concern, however, in that none of the details of such a plan have been provided.

The Clean Water Act must allow an affected property owner to obtain judicial review of an enforcement matter or to question a jurisdictional determination before final permit action occurs. Furthermore, the citizen suit provision must be amended so that it is available only for those with site specific interests. Current processes are not only time consuming for everyone, costly to the applicant and the government, and inefficient for all parties, they are wrong!

We strongly urge the Congress to correct this inefficient, inappropriate process by adopting an administrative appeals procedure.

COMPENSATION FOR TAKING

The Fifth Amendment to the United States Constitution prohibits the government from "taking" private property for public use without just compensation. In the context of the regulatory arena, the Supreme Court has found a taking where a regulation deprives a property owner of all economically viable uses of his land and where the regulation was not substantially related to a legitimate public interest. In July 1990, the United States Claims Court issued two rulings that denial of Section 404 permits resulted in takings for which the property owners must be compensated. In *Loveladies Harbor, Inc. v. U.S., No. 243-83C [Cl. Ct. July 23, 1990]*, the court awarded over \$2.7 million in damages, plus interest and attorney fees. In *Florida Rock Industries v. U.S., No. 266-82C [Cl. Ct. July 23, 1990]*, the court awarded the

plaintiff \$1 million. These appear to be just the beginning of legal taking challenges.

The issue of "taking" is central to the question of wetland regulation since more than 75 percent of all wetlands are located on private property. Individuals have a right to expect that if the government is going to severely restrict or prohibit development opportunities, and thus reduce economic value of their land, they will be compensated for the fair market value of the land.

Some claim this is an unreasonable request because of the government's current budget deficit. However, can a price be placed on the principles upon which this country was founded? The Administration "strongly supports private property rights," but its stance on the issue of compensation advocates the continuation of the status quo. Currently, the courts are clogged with suits regarding the regulation of private property. This system is extremely costly and allows only the wealthy to question an action or to protect their private property rights. NAHB strongly believes that if private land owners have their land "taken" from them through Federal regulatory action, they deserve compensation. The benefits of the government's regulation of wetlands are benefits that all citizens enjoy and the costs of such benefits should be equally shared by all Americans.

Additional arguments are raised proclaiming compensation should not be required because land owners can always take an issue to court. The decision to provide for compensation, however, is a policy matter, not a procedural one. Private land owners whose property is regulated to the point of suffering a substantial diminution of value, should be compensated.

NAHB does not believe that all land owners of jurisdictional wetlands should be compensated for their property. Assuming a reasonable wetland permitting program, compensation should only be granted when the economic value of the land has been severely restricted due to the denial of a wetland permit. These are normally areas where the public protection of such wetlands is believed to be greater than the benefits of the proposed project.

H.R. 1330 achieves this goal by allowing property owners whose land has been designated as containing the highest quality wetlands to apply for compensation within two years of their designation as Class A wetlands. Compensation would be provided at fair market value. NAHB supports this provision.

Finally, it is important to note that regardless of whether a private land owner is able to prove a successful takings claim against the Federal government the regulatory program is not without costs to the general public. When new schools, hospitals, residential neighborhoods or economic development projects are stopped because of Section 404, jobs are lost, growth is restricted, school and local property

tax bases are reduced, and the value of local private property is diminished or totally lost. Although no funds are expended from the Federal government treasury, many different people pay the price.

This is not to suggest that all proposed activities in wetlands should be approved. Instead, we believe the Federal government must recognize that wetland protection has a price. If private lands are to be taken through the Section 404 regulatory program, private land owners should be compensated. Unreasonable demands should not restrict responsible activities in and around wetlands. There is room for wetland protection and economic development to responsibly exist together.

Congress must rethink the impact of wetlands regulations on private property and decide who should ultimately pay the price. Failure to act will only serve to sustain the static nature of today's regulatory scheme. S. 1304 fails to address the subject of compensation, thus will serve to perpetuate the fragmented wetlands policy.

MITIGATION

Although Section 404(b)(1) guidelines and the Corps regulations have general sections on mitigation, the most far reaching policy on mitigation was adopted -- without the public notice and comment required of a rulemaking -- in a Memorandum of Agreement (MOA). In the MOA, the agencies adopted a strict sequence for making wetland decisions: avoidance, minimization, and compensation. Once an applicant proves that he/she has no alternative to the activities for which they seek a permit they must minimize the amount of wetlands to be disturbed and compensate for any damage by mitigating the impacts of any unavoidable activities.

This process, starting with avoidance and allowing compensatory mitigation only as a last resort, is inefficient and in some cases, counter-productive from an environmental standpoint. This "policy" forces permit applicants to focus all their efforts and most of their resources on documenting why they cannot avoid the wetland. This may involve developing several different site development plans with varying levels of wetlands disturbance and a breakdown of the cost impacts of each development plan. This analysis typically results in a Corps' decision that the wetlands cannot be avoided completely. However, to get to this point the applicant must spend considerable time and large sums of money preparing worthless, multiple site plans or searching for alternative sites even though the property may have been purchased years before the development is planned.

The sequencing requirement can also lead to less than optimum permit decisions with respect to the environment. By divorcing the evaluation of the applicant's mitigation proposal from the evaluation of alternatives to activities in a wetland, applicants are precluded from presenting a comprehensive picture of the net

environmental impact of their project. Suppose a developer proposes to build a subdivision on parcel A, completion of which will impact 5 acres of easily mitigated wetland. While progressing through the sequencing requirement, the developer locates Area B, which will similarly serve his needs, but will only impact 4 acres of wetland. The wetlands impacted at site B, however, have values and functions that are difficult to mitigate. The inability of the developer to look at mitigation requirements in the midst of the sequencing mandate will lead him to gain approval for the development at site B even though the chances of mitigation success are much higher than at parcel A.

Because there is no formal, comprehensive Federal policy on mitigation, particularly on the role of compensatory mitigation in the Section 404 program, mitigation gets decided on an ad hoc basis. As a result, applicants again, waste time and money arguing over mitigation requirements. The current case-by-case, site-by-site approach to mitigation also leads to a series of small, unrelated mitigation projects scattered throughout a region. They are often too small and disjointed to maximize wetland benefits, and they sometimes suffer from inadequate monitoring and maintenance.

If this nation is to achieve the goal of no overall net loss of wetlands, or to reach beyond this goal to increasing the nation's wetland base we must address mitigation efforts. This Committee needs to provide the leadership for developing an appropriate mitigation policy that will return this nation to a course of wetland restoration.

NAHB supports the mitigation policy included in H.R. 1330 which recognizes that for mitigation efforts to be successful all interest must work together. Furthermore, we believe mitigation banking is an essential component of any successful mitigation policy.

MITIGATION BANKING

If mitigating the harmful effects of necessary development activities on the nation's waters is, indeed, a central premise of the Federal wetland regulatory programs, the programs must embrace mitigation banking.

The concept of a wetlands mitigation bank, similar to an ordinary bank account, allows the bank owner to create, restore, enhance or preserve wetlands in advance of the anticipated need for mitigation required under Section 404. The wetlands values created, restored, enhanced, or preserved in the bank would be quantified, and the bank owner would be able to sell these mitigation credits to Section 404 permit applicants. Withdrawals from the bank can be made as long as mitigation credits are available.

The idea of mitigation banking is not new. In fact, the Fish and Wildlife Service has used mitigation banking since the early 1980s to off-set the environmental impacts associated with development projects. However, mitigation banking has not been fully incorporated into the Section 404 program because of the lack of Congressional leadership and EPA's concerns over the scientific uncertainty of wetland creation. If a builder creates a 10 acre lake which is stocked with fish, visited by migratory birds and other wildlife, why is it valid for some preservationists and scientists to say this isn't a wetland, when the same individuals maintain that some dry land is valuable wetland. NAHB believes that regardless of whether wetlands can be created there is significant opportunity for wetland restoration, enhancement and preservation efforts.

Mitigation banking offers numerous advantages that will increase our wetlands base and improve the values and functions of those wetlands. The chance that wetlands mitigation will succeed is increased by mitigation banking since mitigation must be provided in advance of the loss. Banks consolidate many small isolated mitigation projects into one larger parcel, thereby creating an area that is "more environmentally valuable area that is more efficient and more economical to develop and manage than several scattered sites." [FWS Mitigation Banking, July 1988, p. 2]. Mitigation banking provides an economic incentive for the bank to make the project succeed. In addition, mitigation banks can be strategically located within the local landscape to satisfy the wetlands needs of the affected region and, unlike on-site mitigation projects, bank sites can be selected on the basis of the likelihood of wetlands mitigation efforts actually being successful.

Whereas the President supports the use of mitigation banking in appropriate circumstances, the provisions included in the "compromise bill" largely stymie the use of mitigation banks. The discretion given the agencies in that proposal, coupled with federal oversight and lack of incentives limits the establishment and use of such banks. In order for mitigation banking to be embraced and workable, flexibility and discretion must be maintained. In addition, the mechanisms available for mitigation banking should include not only restoration, but also creation, enhancement, and in some cases preservation, as stated in the President's plan. Neither S. 1304 nor the President's plan will fully serve the needs of the development community.

Based on the necessity for these components, as well as a degree of certainty, NAHB supports the mitigation banking provisions provided in H.R. 1330. The mandates in the bill would require the Corps to establish mitigation banks in each state for purposes of compensating the loss and degradation of wetlands functions and values under Section 404. The development of these banks would be coordinated with the Fish and Wildlife Service and the Governor of each state, while private banks would also be encouraged.

STATE PERMIT PROGRAM ASSUMPTION

Although Section 404 of the Clean Water Act provides a mechanism for states to apply and assume the Section 404 permit program, NAHB urges the Committee to take actions to encourage that state assumption. Since wetland characteristics and functions vary from region to region and water resources deviate from watershed to watershed, everyone seems to agree the regulatory permit program should be administered by the states. State assumption could deliver permits faster, offer one stop for state and Federal permits, provide more intimate knowledge of the resource, project and local land use planning, and administer greater long-term oversight. These merits save time, money and confusion. Despite the merits and the broad agreement on assumption, Michigan is the only state that has assumed the program and it recently warned in testimony before the Senate, that it may withdraw because the Federal program has become unworkable.

This breakdown in state assumption is particularly disappointing when one considers that while the Federal government is focused on regulatory gridlock the states have lead in wetland planning, restoration and management. All coastal states provide wetland regulatory protection and management, and 18 inland states have adopted freshwater wetland regulatory statutes. In addition, an estimated 5,000 local governments have adopted wetland protection regulations. Many additional state and local governments are poised to take on larger wetland management roles, particularly if encouraged and provided incentives to do so.

Many suggest states have not assumed the program based on the lack of Federal financial assistance. While this is a significant problem, a number of factors actually contribute to the assumption failure. The most often mentioned obstacles are EPA inflexibility, the lack of clear, consistent program goals, and the failure of the Clean Water Act to provide a well thought-out partnership role.

High on the list of obstacles is the inflexibility of the EPA. Guidelines issued by EPA are too rigid to allow states adequate leeway to design a permit program. EPA believes that the Clean Water Act program requirements for compatibility mean that states need to change their statutes and regulations to be identical to the rigorous Federal program. States should be allowed to design programs that are consistent with Federal program goals even if the program itself is not identical. Indeed one state testified that were this allowed, it would assume the permit program.

States have also objected to EPA's permit-by-permit review and veto. They have acknowledged the need for Federal oversight but object to EPA's individual permit veto. They prefer annual program reviews. States have also objected to the constant changes in program policy issues and the lack of state involvement in the regulatory decision-making process. States want a partnership role in consistent, stable program regulations.

NAHB supports the concept of wetlands conservation and management planning for states provided in S. 1304, but the specifics included in the bill make such plans virtually impossible for a state to complete. The plan requirements are extensive, and most must be completed prior to grant application. As stated above, most states do not have the funding to complete such tasks on their own. The carrot, provided in the form of possible financial assistance, is not predictable nor guaranteed. Monies must be made available at the onset of the planning process, not at the end. The President's plan, on the other hand, seeks to lure states into assuming responsibility by allowing partial assumption of the Section 404 program. Unfortunately, this plan does nothing to address the shortcomings of the existing assumption process, but simply allows a state to issue programmatic general permits, which are allowed under current law. Neither plan provides the necessary incentives for state involvement. The incremental changes proposed will simply perpetuate the current situation.

NAHB supports H.R. 1330, which not only encourages the establishment of state programs that address wetlands conservation on an ecosystem or watershed basis, but also establishes more flexible criteria to encourage state assumption and deference to local planning.

CONCLUSION

The result of our current wetland regulations is that in addition to wetlands being lost, jobs are also being lost, economic development opportunities missed, tax assessments are threatened, and housing costs are rising.

The past two administrations have, through the Grace Commission report and through Vice President Gore's "reinventing government" initiative, embraced the notion of streamlining government. No area of government cries out for this reformation more dramatically than our wetlands program.

It is time Congress reform this nation's wetland law, establish national policy, and put an end to simply maintaining the status quo. Accordingly, NAHB urges Congress to:

- * Transfer all authority for wetland permits to the Army Corps of Engineers;
- * Establish a responsible definition of water of the United States;
- * Exclude from regulation under Section 404 all land areas which currently fail to meet a strict three parameter definition of wetlands;

- * Focus wetland protection on our nation's most valuable wetlands by classifying all wetlands into three categories and provide regulatory protection accordingly;
- * Improve the regulatory process by establishing a wetland mapping system, an administrative appeals process and setting permit processing deadlines;
- * Develop a mitigation banking system;
- * Compensate property owners who own the highest category of critically significant wetlands; and
- * Require all program regulations and guidelines be subject to public notice and comment.

In short, we urge adoption of H.R. 1330.

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National
Association of
Towns and Townships

**STATEMENT OF THE
NATIONAL ASSOCIATION OF TOWNS AND TOWNSHIPS
SUBMITTED FOR THE RECORD TO THE
SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE
SEPTEMBER 22, 1993
REGARDING THE FEDERAL WATER POLLUTION PREVENTION
AND CONTROL ACT OF 1993**

The National Association of Towns and Townships (NATaT) appreciates the opportunity to submit testimony for the record on legislation to reauthorize the Federal Water Pollution Control Act (FWPCA).

NATaT represents more than 13,000 mostly small, mostly rural governments across the United States. These communities are typical of the nation's 39,000 general purpose local governments: 86 percent of local governments serve populations of less than 10,000 people and 67 percent govern less than 2,500 residents. Consequently, small communities represent the *majority* of governments in the United States.

Throughout the reauthorization of the Federal Water Pollution Control Act, NATaT encourages Congress to consider the ability of small communities to implement unfunded mandates. Local governments face numerous constraints because of limited financial and human resources and technical expertise. As a result, the resources needed to comply, implement, and pay for unfunded federal mandates are not readily available.

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The Federal Water Pollution Prevention Control Act of 1993 - S. 1114**State Revolving Fund**

Clean Water Act reauthorization legislation must recognize that small communities face unrealistically high cost increases in water and sewer bills as a result of compliance with present Federal Clean Water Act requirements. Small communities have been placed at a disadvantage when trying to obtain funding from state revolving funds (SRFs), particularly because they tend to lack bond ratings and have limited revenue generating capabilities compared to large municipalities. Therefore, the SRF funding mechanism should be structured to assist small communities with compliance, especially where costs of compliance are disproportionately higher than in large communities.

The provision in S. 1114, which allows state matching funds to be used *at state discretion* for grant programs to disadvantaged communities, begins to address the need to facilitate access by small communities to SRF monies. Unfortunately, this provision does not *ensure* that these communities will receive the funds that they desperately need to maintain safe water systems.

Small communities are projected to experience the greatest increase in annual user costs because of their inability to achieve economies of scale and their proportionately high operation and maintenance costs. As result, NATaT recommends a *small community 20 percent set-aside* within the SRF, to ensure that SRF programs obligate funds to those communities lacking the revenue base and management capacity to compete with larger municipalities for SRF monies. In lieu of the set-aside, NATaT supports more attractive and affordable loan repayment terms for small communities and therefore recommends that the current *20 year term* be extended to a *30 year term*, consistent with the useful lifetime of those plants. Twenty-year terms create unaffordable repayments for small communities with limited rate bases.

Although states have increased flexibility in setting SRF funding priorities and the provisions in S. 1114 allow funds to be used not only for construction of sewage treatment plants but also for combined sewer overflows, land acquisitions and new watershed management, NATaT believes that states should be required to establish separate categories of priorities for urban and rural facility needs in order to minimize competition for funding. NATaT is concerned that increasing the range of acceptable spending for the SRF without distinguishing rural and urban community needs will promote the distribution of SRF monies primarily to large urban areas.

Storm Water

NATaT has been concerned with the storm water program, particularly mandates to control storm water discharges from industrial sources. Although communities smaller than 100,000 in population have been granted a reprieve until October 1, 1994, many of our small communities will not know if they need to apply for such permits until the Phase II regulations are issued. The regulations could force local governments to expend significant amounts of money on programs for which they are not currently budgeting. Cost estimates of an application alone is in the range of \$500,000 to \$1 million.

S. 1114 narrows the scope of NPDES program applicability to storm water discharges and eliminates Phase II of the storm water regulations except for urbanized areas associated with the existing Phase I municipal storm sewer systems. S. 1114 specifically relieves towns and townships by allowing a 10 year moratorium on mandates to meet storm water effluent limits for municipal storm sewer systems serving populations under 100,000. Given the inability of EPA and the states to fully implement Phase I requirements, NATaT supports the provisions in S. 1114 which would eliminate the great burden of complying with pending Phase II requirements.

Alternative Technologies

The use of low-cost technologies and lower maintenance cost options should be encouraged to promote the development of affordable management and

treatment programs. For example, the use of constructed wetlands or lagoon systems can help small communities, individual households or rural subdivisions afford wastewater treatment. Rural areas are ideal for such innovative systems because they have available land area and a lower population density.

NATaT supports amending the Clean Water Act to provide specific incentives to foster the widespread development and research of new technologies by states and localities. In addition, EPA should be given the lead role in encouraging states to certify new technologies and approaches as permissible solutions. NATaT supports such a role for EPA which would further promote the development and implementation of innovative technologies.

Annexation and Wastewater Treatment

Small towns and townships particularly in the Midwest, have increasingly been confronted with the threat of annexation by municipalities if they are to receive wastewater treatment services from those municipalities. Annexation has been a problem since the days of the EPA construction grant program, despite EPA regulations that prohibit such actions. Frequently, municipalities have demanded that communities be annexed in return for services, even though the municipality included those communities in the prospective service area of the facility at the time the original grant application was generated.

To address this issue, NATaT recommends the inclusion of language in the Clean Water Act, specifying that municipalities may not threaten to withhold wastewater treatment services from systems constructed with federal financial assistance unless a community agrees to be annexed.

Non-Point Sources

Non-point source pollution has been a significant contributor to the remaining water quality programs in the U.S. Curbing non-point sources involves changes in land-use practices that traditionally have been the sole

province of local governments. As a result, local governments need flexibility within the state programs to improve watersheds.

NATaT supports the provisions in S. 1114 which would allow landowners in designated areas to put in place "best management practices" (BMPs) as outlined by the states to stem runoff from their property. Further, our towns and townships would greatly benefit by the option included in S. 1114 which allows landowners to develop site-specific plans for their land rather than complying with the more general state plans. The greater flexibility will facilitate local efforts to manage non-point source pollution and undertake non-point source management programs. This flexibility will also increase the variety of innovative management practices, institutional arrangements, and watershed projects.

Conclusion

With the decay of existing infrastructure, the diminishing federal role in public works investment, and the rising costs of meeting emerging environmental regulations, the reauthorization of the Clean Water Act should recognize that more stringent standards should not be imposed *unless such mandates are adequately funded.*

EPA's most recent needs survey places current wastewater treatment requirements at \$65 billion, with an additional \$110 billion needed over the next 20 years. These costs when combined with the costs to local governments for meeting all existing environmental mandates, raises legitimate concerns over the ability of local governments to provide environmental protection and solve environmental threats.

In order for our towns and townships to comply with these mandates, *federal funding and regulatory flexibility must be provided.* Funding must be set aside for small communities so that they are not forced to compete with large municipalities who possess the administrative, technical, and financial resources needed to access SRF monies.

Regulatory flexibility must be provided so that local governments can solve environmental threats that they have targeted. The goal is not to roll back environmental protection but allow for the development and implementation of alternative and innovative approaches to address environmental problems. Flexibility would only serve to encourage local governments to comply rather than violate federal environmental mandates.

NATaT appreciates the opportunity to comment on S. 1114 and is supportive of the efforts of Senators Baucus and Chafee in providing legislation to commence the national debate on the Clean Water Act.

**Written Comments of the
National Marine Manufacturers Association (NMMA)
on S. 1114
The Water Pollution Prevention and Control Act of 1993
to the
Senate Environment and Public Works Committee**

General Comment

NMMA agrees that further investment in water quality protection is essential and that additional resources must be made available to State and municipal governments to further the goals of the Clean Water Act (CWA). NMMA is also pleased that S. 1114 acknowledges the central importance of well grounded science as a basis for regulation, coupled with an acknowledgement that affordability and economic impact issues must also be considered. However, NMMA is generally concerned that the bill significantly rewrites the CWA, one of the most successful major environmental laws enacted, and makes the law more prescriptive. NMMA believes that the flexibility inherent in the CWA must be preserved so that public and private interests will have the fullest opportunity to eliminate the remaining threats to our Nations's waters in the most cost-effective manner.

Specific Comments

1. Section 304 requires the U.S. Environmental Protection Agency (EPA) to develop national guidance for nonpoint source control that specifies management measures and program implementation criteria. This approach sounds very similar to the recently enacted guidance under Section 6217 of the Coastal Zone Management Act (CZMA) which will apply in the twenty-nine coastal states where a majority of our members are active. NMMA strongly urges the Committee to consider creating a single regulatory program for nonpoint sources of pollution, or conversely to legislate the compliance with the CWA nonpoint sources provisions will be deemed compliance with the CZMA nonpoint source requirements, or vice versa. The regulatory burden on our members of having to comply with two essentially identical programs would be confusing and unnecessary.

2. Section 402 amends the stormwater permit program, primarily as it relates to municipal discharges. The control of stormwater sources that currently do not require a permit (Phase II sources) is to be further studied. NMMA believes that Phase II stormwater sources should be rolled into a single CWA\CZMA nonpoint source control program, as discussed above.

3. Section 302 provides new authority for voluntary watershed management programs at the state level which would comprehensively manage all sources of pollution in a watershed. NMMA supports the concept of hydrologically-based water pollution control, but is concerned about the possibility of significant variations in requirements from watershed to watershed, as well as the potential for dual regulation in interstate watersheds. NMMA believes that some minimum form of national watershed program guidance to states is necessary. In addition, NMMA believes that in any allocation of water pollution reductions between point and nonpoint sources within a watershed, credit should be given to nonpoint sources for any voluntary nonpoint source reductions that are made in excess of CWA/CZMA requirements. NMMA also believes that compliance with all sediment and water quality standards cannot be achieved in ten years, as required by the bill. This requirement should be extended to 15 years or more in order to avoid unnecessary litigation against watershed planners for failure to meet deadline.

4. NMMA believes that S. 1114 should explicitly support/authorize the use of economic incentives to reduce water pollution, such as point/nonpoint source trading.

Any questions on these comments may be directed to Mary M. Mann, NMMA Director of Federal Government Relations [(202) 944-4980].



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WRITTEN STATEMENT OF GERALD E. DORFMAN

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PREPARED FOR THE

**SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE
UNITED STATES SENATE**

***THE UNSEEN CRISIS:
AMERICA'S CRUMBLING CLEAN WATER INFRASTRUCTURE***

SEPTEMBER 1993

CONSTRUCTORS OF WATER, SEWER AND UNDERGROUND UTILITY SYSTEMS

Mr. Chairman and members of the Subcommittee, I am Gerry Dorfman, President of the National Utility Contractors Association (NUCA). NUCA represents contractors, suppliers, and manufacturers across the country who construct the sewer and wastewater treatment facilities financed through the Environmental Protection Agency's State Revolving Loan Fund (SRF) Program. I have been in the business of building water supply and wastewater treatment facilities for over thirty years and presently serve as President of Dorfman Construction in Woodland Hills, California.

I am pleased to provide my industry's insights and recommendations regarding reauthorization of the Federal Water Pollution Prevention and Control Act and S. 1114 in particular. Foremost, we support the existing Clean Water Act's general structure and the wastewater treatment construction financing mechanism. Capital funding levels, however, have been woefully inadequate. A minimum \$5 billion annually is needed to meet secondary sewage treatment needs alone. To close the gap between water infrastructure needs and projected federal, state, and local investment, NUCA recommends the study of dedicated revenue sources. We support the elimination of the SRF funding restriction on sewer collectors and combined sewer overflow corrections, but strongly oppose eliminating the restriction on funding land acquisition. Furthermore, NUCA seeks to require that all federally assisted clean water projects be publicly bid and awarded to the lowest responsive bidder. Finally, and perhaps most importantly, the wetlands reform debate must not hold the clean water construction program hostage.

I. THE SITUATION AT HAND

The various scientific studies and statistical assessments that document water pollution problems are important but sterile. They fail to convey the nature of the harm in every day terms. I want to tell you first-hand that the water infrastructure needs in the United States are tremendous, in terms of the investment required for construction and rehabilitation and in terms of the devastating social, environmental, and economic opportunity costs that result from our reluctance to devote sufficient resources to the problem.

A renewed federal commitment to clean water construction should not be a tough choice. I don't need to tell you the importance of maintaining fresh water supplies. Clean Water Act construction programs have improved the quality of the nation's water resources immensely to the benefit of all. Nevertheless, clean water construction funding remains a top national priority.

A. Deteriorating Sewer Systems

Not long ago, my company replaced a septic system that served a rural neighborhood in Northern California. Financing for the job was provided by the federal government. While I was prospecting the site before preparing my ultimately successful bid, I was absolutely dumbfounded to discover that the families' backyards were saturated with raw sewage that had overflowed from failed leaching systems. These families were literally trapped in their homes. The children could not play outside. The entire neighborhood was a public health hazard. The impact on the quality of life was immeasurable. The federal investment in this community was necessary and sound, and it is important

for me to tell you that the neighborhood is thriving since the completion of the job.

The sewer problem is urban as well as rural. On a project for a major city in Southern California, we recently replaced a sewer pipeline that had failed earlier than expected due to unstable ground conditions. When we uncovered the pipe, we found gaping holes where raw sewage had been escaping into the surrounding ground for an unknown period of time. The devastating part of the story is that the collapsed system was located less than 100 yards from a fresh waterway. Whenever the tide rose, the pipe carried fresh water to the treatment plant. When the tide went out, so went the sewage. We had uncovered a daily exchange of raw sewage and fresh water.

B. Combined Sewer Overflows

A second problem occurs with combined sewage overflows. On a project in the Northwest, our firm replaced a large-diameter brick sewer built in the early 1900s. There were numerous delays when work was suspended due to heavy rainfall. On more than one occasion, I stood with my superintendent watching raw sewage and rainwater discharge into a river because the infrastructure could not process the influx added by the storm. This was not an isolated event. All 1,100 of the nation's combined sewer systems need to be augmented so they function as a storm system or a sewer system, not both.

C. Leaking Drinking Water

Thousands of miles of old and decaying drinking water lines also contribute to water pollution. My son recently replaced a 10,000-foot water line for a community in Southern California. He was continually plagued with suspension of work because the adjacent line, which his work was to replace, leaked like a sieve. As you can imagine, this situation entailed an incredible loss of water to the community as well as enormous construction costs, but that is not my point. The leaking clean water contributed to water contamination when it merged with sewage from leaking sewers beneath. The increased volume of contaminated water flowed to the closest aquifer or waterway. In addition, some of the leaking clean water entered the sewer and returned to the treatment plant. The water pollution ramifications of a drinking water system failure are extensive. The people who suffer the consequences are unsuspecting, downstream.

D. Lessons From Experience

I have drawn a number of observations from these and other experiences in the field since the Clean Water Act was last amended in 1987. First, I find it particularly poignant that all of my fellow NUCA members, from any state in the land, could tell similar stories. That is the appalling reality of the situation, despite great progress under the Clean Water Act. Second, the most important needs are not new or particularly complex. It is simply a matter of core infrastructure -- pipes in the ground -- falling apart because they have not been replaced in half a century. Too often, we try to construct bigger and

better treatment plant facilities, while ignoring the source of the problem. An incisive and rigorous attack at the source, the ancient pipes, will effectively stop contamination of water supplies. In addition to these important traditional needs, we must simultaneously address new threats to water quality.

Third, and despite the frequent occurrence of water quality emergencies such as those I have described, Americans continue to ignore the water infrastructure crisis because collection, delivery, and treatment facilities are generally out of site and out of mind in the absence of crisis. Unlike a pothole in the highway, you cannot preempt a water catastrophe unless you look for it.

Forth, the problem itself has become so egregious that even individuals familiar with the issue are repulsed by the massive remedy that is so clearly necessary. Too often, a listener's eyes glaze over when I mention a growing \$200 billion clean water infrastructure deficit. The cynic in me wonders how many deaths, such as those caused by the recent water contamination crisis in Milwaukee or the sink hole in Atlanta must occur before we get serious.

Fifth, correcting these problems will generate immediate and lasting economic benefits. Functioning clean water infrastructure is an obvious and absolute precondition for industry, agriculture, retail commerce, professional services, government, schools, hospitals, emergency services, recreation, affordable housing, and everything else. Furthermore, the people who work for me do not consider their careers make-work. They are educated, make good wages, pay plenty of taxes, save a little, and plow the rest right back into the private sector.

II. S. 1114 AND NUCA RECOMMENDATIONS

A. Funding

1. \$5 Billion Annually

For the eight-year period 1993 to 2000, NUCA recommends annual authorized funding of at least \$5 billion for the wastewater SRF Program. This recommendation corresponds to the most conservative assessment of investment needs -- investment needs above and beyond what the states are likely to spend themselves. We have not inflated our estimates, and we cannot in good conscience recognize lower funding levels as adequate. We applaud the authors of S. 1114 for their attempt to reach the \$5 billion level.

2. Dedicated Revenue

NUCA strongly supports the creation of a new revenue generating program targeted directly and exclusively to clean water infrastructure. This revenue raising program should incorporate a user-fee principal, such as a sewer hookup fee or a fee on water use. We encourage the Subcommittee to explore new sources of dedicated revenue for needed clean water infrastructure and recommend that S. 1114 be amended to require a study of revenue raising alternatives.

B. Structure Of The Program**1. Loans, Not Grants**

NUCA does not play a direct role in the administration of federal clean water funds. Companies in our industry bid on funded projects when bids are solicited by project owners. Nevertheless, the utility construction industry has a direct stake in the efficient use of limited federal resources. NUCA favors the continuation of the State Revolving Loan Fund Program (SRF). While the SRF can be implemented more effectively with minor legislative adjustments, its fundamental characteristics are preferable to direct grants.

First, we embrace the intent of the program, which is to provide states with a revolving, permanent pool of capital. Of equal importance is the fact that SRFs can be leveraged to create bigger lending pools. Extended amortization periods beyond the current 20-year maximum loan term and loan principal subsidies are some of the adjustments that should be made to make the SRF more attractive source of financing to small or hardship communities that have not been able to participate.

NUCA opposes funding for project-specific grants because they encourage communities to postpone projects in the hope of receiving a grant and tarnish the reputation of the construction program by calling into question the fair distribution of federal resources. Moreover, the Rural Development Administration already administers a growing wastewater treatment grants program for small communities that cannot afford loans.

2. Eliminate The Restriction On Sewer Corrections

NUCA strongly favors the elimination of restrictions on funding sewer collectors and combined sewer overflows as proposed by S. 1114. The experiences described earlier demonstrate the necessity of removing the current restriction in Section 201(g)(1) of the Federal Water Pollution and Control Act. In addition, NUCA opposes the inclusion of special earmarks or set-asides designed to address singular water pollution problems. Each state should be given the flexibility necessary to address its unique blend of needs.

3. Land Acquisition

NUCA supports the current restriction on the use of SRF funds for the purchase of land. We recognize that this restriction may make the SRF a less attractive source of financing in some communities, especially rural communities that require land for collectors and interceptors. Nonetheless, we believe that the SRF funds must not be diluted at this time for this purpose.

4. Private Sector Design And Construction

We recommend that S. 1114 include the requirement that all clean water infrastructure projects funded by the federal government must be publicly bid. This stipulation will ensure that public works projects are designed and constructed only by private sector firms, which must pay federal taxes and comply with federal OSHA requirements.

5. Administrative Costs

The amount of money in an SRF that may be used for administrative costs is presently limited to four percent of the federal capitalization grant received by the fund. It has been suggested that the four percent limit can prevent efficient SRF administration -- especially in states that leverage their fund. NUCA encourages the Subcommittee to explore ways to increase the administrative efficiency of the SRF that do not require the use of precious appropriated capital funds to cover operating costs. A small percentage of each state's total fund for administrative purposes is one such alternative.

C. Wetlands Regulatory Reform

The United States is in urgent need of a comprehensive and coherent national wetlands program that protects vital wetlands from destruction, allows for the delivery of essential public services, minimizes burdens on the small business community, and enhances the overall quality of life. NUCA believes that federal decision-making power regarding wetlands management should be consolidated under the auspices of a single agency -- preferably the U.S. Army Corps of Engineers. Wetlands should be clearly defined, classified, mapped, and indexed. The level of protection for each classification should correspond to its ecological value. Lands of marginal ecological value should not be regulated. Permit application procedures should be streamlined and include a reasonable deadline for permit decisions. An administrative appeals process should be established to handle permit denials, administrative

penalties, and jurisdictional disputes. While NUCA supports reform of federal wetlands management, we are very concerned that congressional consideration of the wetlands issue will substantially delay or even preclude reauthorization of the Clean Water Act during the 103rd Congress. The wetlands reform debate must not hold the clean water construction program hostage.

III. CLOSING

At NUCA, we suspect that federal funding for clean water facilities is more important to the families of this country and the future of this country than much of the domestic discretionary budget. The need for increased capital funding and new sources of funding cannot be emphasized enough.

We commend this Subcommittee's determination to reauthorize the Clean Water Act by the end of this year. S. 1114 is a good starting point for discussion, and we appreciate the opportunity to present the views of the underground utility construction industry.

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TESTIMONY

OF

WILLIAM B. SCHATZ
General Counsel

Northeast Ohio Regional Sewer District
Cleveland, Ohio

BEFORE

THE

SENATE ENVIRONMENT AND PUBLIC WORKS COMMITTEE,

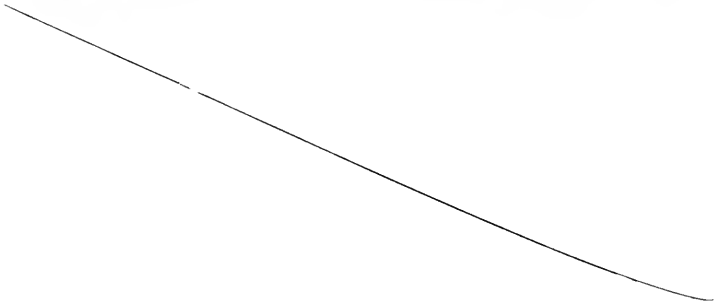
SUB-COMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE

August 4, 1993

Mr. Chairman and members of the Committee, I appreciate the opportunity to present testimony to you today. My name is William B. Schatz, and I am the General Counsel of the Northeast Ohio Regional Sewer District. Our wastewater treatment agency collects and treats the wastewater for the residents and industries of the City of Cleveland and some 50 other communities in the northeast Ohio area. We were created by an Order of the Cuyahoga County Common Pleas Court in 1972. Since that time, the District has spent over \$1 billion on construction projects to upgrade and improve water quality in the greater Cleveland area. One of the results of these efforts has been the tremendous improvement of water quality in Lake Erie and the Cuyahoga River.

The District owns and operates three major facilities within its service area. The Westerly Wastewater Treatment Plant, which is on the Lake Erie shoreline west of Cleveland, was rehabilitated and converted to a physical chemical treatment process commencing in 1974. The District's overall expenditure exceeded \$120 million for the upgrade of this 50 million gallon per day facility. Much of the facility was financed in part by the use of USEPA construction grant funds.

The process selected by the District was one which was touted by USEPA during the late 1960s and early 1970s as the technology of the future, particularly for facilities which treated high concentrations of industrial wastes. Rather than utilize conventional biological treatment, the process relied on removal of the solids through sand filters and carbon adsorption. During the course of construction, a number of problems were encountered both with the various phases of the



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process and with certain equipment.

Through the early and mid 1980s, the District diligently dealt with construction and equipment problems and committed to the successful operation of the facility. After spending additional funds to change components of the system and process, a study of the facility was undertaken in 1989 to ascertain if the process would work. The study concluded that the process was fundamentally flawed and would not enable the District to meet its NPDES permit limits for the Westerly treatment works. The District then decided to abandon and remove portions of the plant related to the physical chemical process and install a conventional biological facility with aeration and trickling filters.

A consulting engineer was retained by the District. After two years of design effort, construction commenced with a contract for site preparation. Three new contracts were let this year to upgrade the facility, and construction is now underway to convert the plant into a biological treatment operation. The cost of the actual conversion to a biological process is approximately \$35 million, although with engineering and other costs incurred by the District, the overall cost will be several million dollars.

In addition, USEPA has brought an enforcement case against the District because the plant does not meet its effluent limits. The District has asserted a defense in this litigation with USEPA, claiming that it relied on the technology then touted and urged upon the District by USEPA. Also, auditors of the Office of the Inspector General during the construction grant close-out audit have set aside those portions of

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the total cost funded with USEPA construction grants that are related to the flawed technology. This set aside means that the funds might be declared as eligible after the plant has been converted to a biological process and then meets its permit limits.

I appear before you today to request your assistance in obtaining recognition of this problem, and acknowledging the need for an authorization of an amount not less than \$35 million to assist the District in the reconstruction of this facility. This request is made with the caveat that there should be some fundamental fairness in the manner in which the users of the District's system are treated when they rely on representations made by the Federal government.

The rationale is that the District did rely on technology at this facility that was recommended and approved by USEPA. Without exception, other facilities constructed using this technology have all been converted to another process or otherwise rehabilitated. Several have received assistance through additional USEPA construction grants, which are, however, no longer available to our District or other agencies. Arguably, had this facility been funded at the time when innovative or alternative construction grant funding was available, the facility would have qualified for such funding. Thus, the result of the failure of the process would provide that USEPA participate with funding at a level of 100% to rebuild the flawed technological portion of the treatment works.

The Westerly Wastewater Treatment Plant was the largest application of the physical chemical treatment technology in this country, and of course the largest facility which was unable to meet permit limits. The

Page 4

District spent several years and millions of dollars of its own additional funds to try to make this facility achieve its permit requirements. Now, the District must not only face the burden of the reconstruction of this facility, but must defend the lawsuit brought by USEPA. While we recognize that funding of specific projects in today's legislative environment is difficult because there are fewer discretionary funds available, we believe that this situation is so unique that it cries for the relief we request. We also seek through legislation an acknowledgement that the District's problem of permit noncompliance is not of its making, and given the fact that USEPA participated in the selection of and urged the flawed process, no civil penalties should be assessed against the District.

In closing, I again would like to thank the Chairman and members of the Committee for your time. I would be pleased to provide any additional information for your consideration. I once more urge that the citizens of northeast Ohio receive the fair treatment to which they are entitled caused by this mistake, and that they not have to shoulder alone the burden of the cost of the change of this process.

NORTHWEST
MARINE TRADE
ASSOCIATION



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August 5, 1993

Comments of the Northwest Marine Trade Association

on S. 1114

The Water Pollution Prevention and Control Act of 1993

Provided to the Subcommittee on Water Resources
Committee on Environment and Public Works
United States Senate

Thank you for the opportunity to submit this written testimony for the record. Our Association, representing over 1,000 member firms in the Pacific Northwest, supports the goals of this reauthorization of the Federal Water Pollution Control Act. The recreational boating industry is dependent on clean water for boating, fishing, sailing, diving, and other activities engaged in by boaters throughout our nation.

Boatyards, marinas, and boatbuilders in the Northwest have made a strong commitment to achieving compliance with the current provisions of the Clean Water Act. This compliance effort has been expensive to implement, necessitating an increase in costs to the end users, and the boaters themselves. Unfortunately, the price being paid by boaters, and the efforts of our industry along with other point source permit

holders, have not resulted in an acceptable level of water quality. Nonpoint pollution has now been identified as the major contributor to water quality degradation and S. 1114 begins to address this source of pollution.

NMTA concerns with the bill include the following:

Section 501 permit fees. Our concern is not with the fees but the lack of fiscal accountability levied upon the states in regard to collecting and administering the fees collected. The bill requires funds be spent only on water quality programs, but does not provide methods of insuring a state's program is run efficiently or that funds are spent wisely. Also lacking is some form of permit fee relief for reducing or eliminating all pollutants from a permit holder's discharge. Washington State's entire water quality program is funded 100% by fees paid by businesses. This current biennium, Washington will be assessing over 20.7 million dollars in permit fees on approximately 2,300 permit holders. Some small companies may see fees for a general storm water NPDES permit run from \$900 per year to a high of over \$100,000 per year. Industrial or process NPDES permit fees may begin at \$500 and run to well over \$100,000 per year. When a state or state agency ceases looking at fees as an offset to the cost of administering the water quality program and begin to look to fees as their sole funding source, then fees have ceased being fees and become in fact taxes for operating a business that utilizes and discharges water for producing a product or service. If section 501 does not provide for a level of fiscal accountability in an agency, then the cost to businesses all over our country will continue to climb unchecked. Fiscal responsibility must be included in this section of S. 1114.

Section 304 requires the Environmental Protection Agency to create a National Program Guidance which sounds identical in nature to the recently implemented 6217 nonpoint guidance manual implemented under the Coastal Zone Management Act. Representatives of our industry spent significant effort working with EPA and NOAA in attempting to create a program within 6217 which would work in our waterfront marine facilities. The final guidance under 6217 is still flawed in its limited approach to addressing nonpoint pollution in our marinas and boatyards. The new program envisioned within S. 1114 appears to provide the needed flexibility lacking in 6217 and would make compliance easier for our industry. What must be done is to provide within the law a manner for the States to select which program they wish to administer. Applying two separate but similar programs through two different federal agencies will only lead to confusion and poor implementation of both programs.

Section 502(f) requires the Administrator of EPA to draft regulations which would require a permit applicant to characterize the nature of their effluent discharge and the contribution of that effluent to the receiving waters. We can support the requirement to identify all the constituents within an effluent discharge, but many small business operators lack sophistication in the permitting process and will be unable to relate their discharge to the makeup of the receiving waters. To contract with a consulting engineering firm to accomplish this requirement will be quite expensive. A manner of achieving the desired goal of the bill within the level of knowledge and skill of small dischargers needs to be found.

Finally, section 302 would create a comprehensive watershed management program for the nation. We support this approach to pollution prevention because it appears to bring both point and nonpoint source reduction into proper focus. There is concern though that the watershed planning process would result in different rules, practices, fees, and requirements for each watershed. A boatyard in one watershed would not be able to provide services available on other watersheds or the service charges would differ due to higher fees or more expensive pollution abatement requirements. For marinas (moorage facilities), the regulations and practices could vary from marina to marina based on which watershed the facility is located upon. This would offer unfair competitive advantages to one over the other. In many cases this problem already exists between states with differing regulations. Because boats may sail easily from place to place, the regulations governing their use, moorage, and repair must be similar if everyone is to understand their responsibilities and to prevent flight from watershed to watershed and provide equity among businesses in different watersheds.

An important component of the bill is education. As pollution prevention is applied to smaller and smaller businesses, the ability to comply becomes much more difficult. First and foremost is the total lack of knowledge of a law to be complied with. Secondly when a business learns of a requirement's existence, it has little or no idea of what it should do. But because small business people are closer and more involved in their respective communities than most large corporations, they have a greater sense of responsibility to their communities's well-being. Awareness of

environmental responsibility and the sense of duty to protect our environment is created by education and information not by laws in a book.

The recreational boating industry, its service providers, and boaters, along with representatives of the Sea Grant program and the environmental community, created a plan for a national education program for marina and boatyard operators throughout the country. The "CleanMarina Program," administered by the International Marina Institute and directed by an industry committee would provide a comprehensive water quality peer group educational program. The "CleanMarina Program" would fit the spirit of the educational efforts prescribed in S. 1114 and would provide workshops and pollution prevention materials within two years of funding. We urge the Committee to include a provision in the bill for the support of the boating industry's "CleanMarina Program" and to support its passage. A "CleanMarina Program" proposal is attached.

Northwest Marine Trade Association supports the effort of the Environment and Public Works Committee in attempting to find solutions to our nations water quality problems. We hope these comments will assist the Committee in making this reauthorization process one that is truly effective and economically achievable.

Thank you for considering our comments. Questions may be addressed to Hal Schlomann (206) 634-0911.



c/o *National Association of Photographic Manufacturers, Inc.*

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American Hospital Association
 American Society for Photogrammetry
 and Remote Sensing
 Association of Cinema
 and Video Laboratories
 Association of Professional
 Color Laboratories
 Association for Information and
 Image Management
 City of Albuquerque
 Graphic Arts Association
 Graphic Arts Technical Foundation
 International Minilab Association
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 Institute
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 Silversmiths of America, Inc.
 National Association of Photo
 Equipment Technicians
 National Association of
 Photographic Manufacturers
 New Mexico Silver Users Association
 Photo Marketing Association
 International
 Photographic Manufacturers and
 Distributors Association
 Printing Industries of America
 Professional Photographers of America
 Professional School Photographers
 of America
 Silver Institute
 Silver Users Association
 Society of Photo Finishing Engineers
 Society of Photographic Counselors
 Texas Environmental Advisory Council
 The Society for Imaging Science
 and Technology

September 27, 1993

Senator Bob Graham, Chairman
 Subcommittee on Clean Water,
 Fisheries and Wildlife
 United States Senate
 Washington, D.C. 20510

Re: Clean Water Act Reauthorization

Dear Mr. Chairman:

Forwarded for inclusion in the record of the proceedings of your subcommittee is my statement on behalf of the Silver Coalition, an ad hoc group of trade associations, technical societies and governmental agencies that are vitally affected by environmental regulations on silver.

Unnecessary and burdensome silver regulations are adversely affecting photofinishing, medical, dental and industrial motion picture developing, printed circuits, manufacturing, surveying, land use planning and other systems that utilize silver as the image-capturing ingredient.

We look forward to working with your staff and appreciate the cooperation and willingness to listen that has already been demonstrated.

Sincerely,

A handwritten signature in cursive script that reads "Thomas J. Dufficy".

Thomas J. Dufficy
 Executive Vice President

TJD:jb
 Enclosure

WRITTEN STATEMENT OF
THOMAS J. DUFFICY
NATIONAL ASSOCIATION OF PHOTOGRAPHIC MANUFACTURERS
ON BEHALF OF
THE SILVER COALITION

BEFORE THE
U.S. SENATE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN WATER, FISHERIES & WILDLIFE

SEPTEMBER 15, 1993

Mr. Chairman, thank you for the opportunity to present this testimony for the record of your hearings on the reauthorization of the Clean Water Act. I also want to thank the Committee staff for their attention in meeting with representatives of the Silver Coalition about our interest in the Clean Water Act and our suggestions for legislation.

The Silver Coalition is an ad hoc group of trade associations, technical societies and governmental agencies that are vitally affected by environmental regulations on silver. In particular, the Silver Coalition is interested in the water quality standards for silver that result in effluent limitations and pretreatment requirements based on those standards.

The Silver Coalition has been working for some time with the Environmental Protection Agency on these questions, including extensive technical and policy discussions of the appropriate water quality criteria for silver. The Coalition seeks to have the criteria and State-adopted standards reflect the latest scientific information on the potential toxicity of various forms of silver, rather than base such standards on total recoverable silver. The Agency has been responsive in these discussions, and appears to be moving in a positive direction in recent guidance documents. In order to support this movement, and to provide appropriate relief to silver users while these changes are being implemented, the Silver Coalition has identified some areas for possible legislative action.

Background

Currently, over fifty percent of the silver used for industrial purposes in the United States is used in the manufacture of photographic materials. Electrical and electronic product manufacturing accounts for approximately twenty-five percent; sterling ware, electroplated ware and jewelry manufacturing accounts for approximately twelve percent; and brazing alloys and solders manufacturing accounts for about five percent.

The ability to communicate rapidly - "a picture is worth a thousand words" - makes photographic imaging a vital part of people's daily lives, and has greatly enhanced our ability to study the Earth through aerial photography and to assess the need for medical treatment

of injuries and disease through x-ray technology. Photoprocessing activities occur at a variety of industries including photofinishing, medical, dental and industrial radiography, graphic arts and printing, motion picture developing, high-tech printed circuit manufacturing, surveying and land use planning, and a variety of specialized imaging applications, as well as at government agencies. It is estimated that these processes are conducted at more than 550,000 facilities in the United States. These include over 320,000 health care facilities such as hospitals, dental offices, and veterinary clinics. Also included are almost 50,000 non-commercial facilities including photofinishing labs, graphic arts shops, and motion picture studios.

Exposed photographic films or papers must be processed through an on-site photoprocessing facility or use an outside commercial processing laboratory to produce an image for subsequent viewing or printing. After processing, photographic films or papers are then rinsed in cascading water washes to remove the remaining photographic developers. Over the past twenty years, research & development efforts have greatly reduced the chemicals usage needed to process images, in some cases by over 90%.

The remaining processing solutions containing silver can be treated in silver recovery equipment to remove 99% of the silver for later refining and reuse. Silver reclamation is profitable for photoprocessors and is supported by a competitive marketplace which purchases reclaimed silver. Normally, after the removal of silver by recovery units, the processing solutions and spent wash waters are discharged to municipal wastewater treatment systems.

All conventional photoprocessing methods will generate silver-bearing wastes. The silver in the films and papers is removed during processing and will primarily be present in the photographic fixer solutions. These silver-bearing solutions are normally treated on-site with silver recovery techniques, typically electrolytic, metallic replacement, ion exchange, chemical precipitation or combinations of these. The treated fixer is then combined with the other processing wastewater and sent to a publicly owned treatment works (POTW) for further treatment. EPA data show that over 97% of the photographic films and papers used in the United States are processed in facilities utilizing silver recovery. Over 99% of the silver in spent silver-removal processing solutions is easily and economically recoverable. Any trace quantities of unrecovered silver remain in process wastewaters which are sent to POTWs for additional treatment. Silver is not typically recovered from wastewater treatment sludges from POTWs because of relatively low concentrations in the sludge material.

Because silver is a precious metal, photoprocessors and other silver users have a powerful incentive to minimize the discharge of silver. EPA first studied silver discharges from photoprocessing facilities as part of its responsibility to establish industry-wide effluent guidelines and categorical pretreatment standards. Their data showed that over 99% of their discharges were to POTWs, with few direct dischargers to rivers or streams. As a result of these studies, EPA concluded that the economic benefits of silver recovery drove most dischargers to install in-process control equipment; and therefore, Best Available Technology (BAT) levels are being achieved in this industrial category. In 1981, EPA decided against establishing a categorical pretreatment standard for photoprocessors as unnecessary. Since then, a number of process improvements have been implemented in the photoprocessing industry to conserve water and improve effluent quality further.

Improved Water Quality Science: Limited Toxicity for Silver

In laboratory toxicity tests, free silver ions can result in aquatic toxicity. In fact, silver is used in some water supply systems as a disinfectant because of the toxicity of the free silver ions. Some weakly-bound silver complexes may exhibit aquatic toxicity in the laboratory. In the real world, however, the toxicity of silver is far less than can be created in the laboratory. Effluent streams from photoprocessors and most other silver users do not contain toxic forms of silver. Under conditions in the natural environment, dissolved silver in a waste stream quickly reacts with naturally occurring substances or sediments to form silver compounds with substantially reduced toxicity -- in some cases, almost 1 million times less toxic than the free silver ion. Silver is also known to cause no human health effects. This fact was recognized by EPA's Office of Drinking Water in the deletion of the primary maximum contaminant level (MCL) for silver in January, 1991.

EPA's current water quality criteria for silver are based on data collected over 15 years ago and were first published in 1980. These criteria were later incorporated into the Agency's "Gold Book". The acute criteria were hardness based, about 4.3 ug/l for a 100 mg/l hardness water. EPA decided against establishing chronic criteria because the long-term exposure data were difficult to interpret and the acute criteria appeared to be fully protective of long-term exposures. In 1990, EPA published a new draft Silver Criteria Document that proposed chronic water quality criteria. However, the issues cited in the 1980 document remained unresolved, and as a result of public comment, the 1986 "Gold Book" criteria for silver (acute only) were retained.

As required by the 1987 amendments to the Clean Water Act, States were moving to set water quality criteria for listed toxic pollutants, including criteria for silver. Unfortunately, many States adopted, in some form, the 1990 draft silver criteria, although they were never made final. To prevent further confusion, in June 1992, EPA clearly stated that there was no Federal chronic criteria for silver and the Agency did not encourage States to establish their own chronic standard (this was communicated by a letter from Mr. Tudor Davies to EPA Regional offices and State Water Directors). In the final National Toxics Rule (December 1992), EPA formally retained the 1986 "Gold Book" acute criteria for silver, deleted the human health criteria, and again declined to establish chronic criteria.

Over the same time frame, the scientific community has been actively advancing its knowledge of the fate and effect of silver in the environment. Scientists have studied both the impact of water chemistry on silver's toxicity (i.e., chemical speciation), as well as silver interactions with particles, such as silts and clays (i.e., particle adsorption). Silver's intrinsic reactivity makes it quickly combine with natural organics or sulfides or strongly bind with particles to form far less toxic (non-biologically available) chemical forms.

In addition, new "clean sampling" and analytical methods and improved filtration techniques are revolutionizing water chemists' understanding of the actual behavior of metals in the environment, including that of silver. Almost all of the past data collected on metals is now suspect and may provide little, if any, help in determining appropriate discharge rates for metals. Some scientists refer to this as a renaissance era for the study of metals. Unfortunately, as a 1992 report by EPA's Science Advisory Board (SAB) states, "... the importance of chemical

speciation and biological activity is being ignored . . ." in the determination of water quality criteria and standards. The difficulty lies in translating the laboratory-derived silver water quality standards into the real world. Presently, the use of the Total Recoverable Metals (TRM) analytical method means that all forms of silver are treated as equally toxic. This results in over-regulation.

EPA's conference on metals in the environment in Annapolis, Maryland (January 1993) reached a similar conclusion to that of the SAB, where the great majority of scientists recommended that *dissolved* metals be used as one tool in setting water quality standards, rather than total recoverable metals. An EPA summary of the conference, published in the Federal Register on June 8, 1993, said "the dissolved metal concentration better approximates the bioavailable fraction of waterborne metals than the total recoverable concentration of metals. . . . On balance, the assembled experts at the workshop recommend that the existing water quality criteria values be applied as a dissolved metal concentration as the dissolved metal concentration is currently the better estimate for bioavailable metal fractions." EPA will soon publish a guidance document advising Regional Offices and State Water Directors that water quality standards and criteria for metals such as silver can be interpreted to be measured in terms of dissolved metals

Problem Statement

The impact of the States' premature adoption of these very low silver water quality standards, resulting from an outdated view of silver's toxicity, is now being felt as POTW permits are established and overly restrictive pretreatment limits are being enforced. Stringent water quality standards resulting from EPA's proposed (but never promulgated) criteria have caused municipal wastewater treatment systems, in turn, to establish strict pretreatment standards for total silver -- not just the toxic free silver ion forms -- in order to comply with their newly revised discharge permit limits. (See the attached diagram.) Many pretreatment limits have been set at 0.1 mg/l (or 100 ppb) or below (or at the limit of detection for the POTW), which cannot be consistently met with current silver recovery technology or other treatment equipment available for most photoprocessing facilities. Using state-of-the-art electrolytic and metallic replacement equipment, silver concentrations can be reduced by 99%. However, to achieve a 0.1 mg/l or lower pretreatment standard, all of the used photochemicals and wash waters must be containerized and transported off site for further treatment. The Silver Coalition is aware of many cities where this is occurring or has been threatened, including Atlanta, Reading and other communities in Pennsylvania, and cities in Florida, Texas and New Mexico.

It is estimated that over 550,000 photoprocessing facilities in the United States will be affected by the stringent regulation of silver. These facilities employ nearly 3 million people to operate and maintain photoprocessing equipment, and support millions of additional jobs associated with the conduct of their primary business.

To establish a general understanding of the potential costs associated with varying degrees of control for silver, the Silver Coalition estimated the monthly discharge volumes by type of facility and calculated the cost of achieving four different pretreatment standards. The analysis of these case studies shows the potential capital costs facing the photoprocessors in the U.S. runs from a low of \$65 million to a high of \$25 billion if the most stringent standards are imposed.

Increased annual operating costs could reach \$10 billion. As standards are tightened, the rapidly escalating costs have a profound effect on the photoprocessing industry. Smaller photoprocessing businesses will be forced to drop-out and the industry will become centralized, controlled by a fewer number of large players. The larger, surviving facilities have a greater potential to afford the costly treatment equipment (both from a capital cost and operating/labor cost perspective), to achieve the low pretreatment levels, or to deal with hazardous waste management standards.

Proposed Discharge Limits (mg/l)	Projected Capital Costs (\$ million)	Projected Annual Costs (\$ million/year)	Facilities Consolidated due to Standards
No lower than 5	65	45	negligible
Between 1 and 5	11,300	3,200	60,000
Between 0.1 and 1	11,300	6,200	200,000
Less than 0.1	25,400	9,800	360,000

These costs are substantial and significant in financial and employment terms. Implementation of the most stringent requirements could lead to the loss of more than 800,000 jobs. While some jobs would be created in the larger photoprocessing centers induced by the regulation, the transportation sector, or treatment equipment fabricators, these jobs will not offset job losses in the small business sector.

The consequences of these changes will be great. Photoprocessing facilities in small hospital x-ray departments (or dental offices) might close and require shipping of the exposed film to centralized facilities for processing. The increased turn-around time would reduce the doctor's diagnostic capabilities and add to the total cost of health care in this country. Many police department actions could be slowed as identification laboratories are centralized. Newspapers and advertisers might require much longer lead times and deadlines. These trends are in the wrong direction.

Many regulatory agencies and the public at large will be adversely affected, as well. The availability of tax dollars is limited. The inappropriate regulation of silver means that Federal, State, and local regulatory agencies are spending time and resources controlling *de-minimis* risks from silver-bearing discharges and wastes which could be devoted to more important problems.

Recommended Changes to the Clean Water Act

The underlying water quality science for silver has been evolving rapidly over the last five years. Researchers now know that silver rapidly combines with naturally-occurring substances and sediments to form far less toxic complexes. They also have shown that laboratory tests using the most toxic form of a metal do not provide realistic estimates of field conditions. Various studies have shown that silver's toxicity is greatly moderated after use in photoprocessing, reduced even more after biological treatment at POTWs, and any remaining impact is quickly eliminated upon discharge into the environment.

Unfortunately, EPA's and the States' current regulatory structures are not well equipped to respond to this new scientific knowledge. If left unchecked, compliance with ever tightening POTW pretreatment limits driven by over-protective silver water quality standards will result in billions of dollars in expenditures and affect thousands of jobs with little, if any, environmental benefit.

During the reauthorization of the Clean Water Act, the Congress has the opportunity to make changes to the Act's statutory framework to assist EPA in improving its water quality and pretreatment program for silver. The Silver Coalition recommends that Congress consider the following changes to the Clean Water Act:

1. EPA, with support from the Science Advisory Board, should expeditiously update the water quality criteria for silver to reflect its bioavailability and toxic species.
2. States need to receive EPA's assessment, including the SAB findings, and carefully consider this information during their update for silver water quality standards during the normal triennial review cycle.
3. An interim extension provision is needed in the Clean Water Act to prevent outdated water quality standards from imposing large costs on hospitals, dental offices, printers, photographic laboratories and other silver users which will result in little, or no, environmental benefit.

Further Explanation of Recommendation #1

EXPLICITLY RECOGNIZE THE SPECIATION OF SILVER -- Section 304 should be modified to allow EPA to explicitly recognize the speciation of silver in the development of its water quality criteria. The scientific underpinnings are now available for EPA to establish targeted criteria using bioavailability information rather than today's total metals methodology which considers all forms of silver to be equally toxic.

The water quality criteria for silver need to be comprehensively revised, based on input from EPA's own scientists as well as review by the SAB. Current silver water quality criteria are based on test results undertaken over 15 years ago, conducted in pure, laboratory water conditions with a silver compound, silver nitrate, that readily dissolves to free silver ions. As expected from this type of testing protocol, the observed toxicity was very high since free silver species were present. Other scientific studies simulating realistic field conditions have

shown that silver nearly instantaneously combines with other naturally-occurring substances to form much less toxic compounds, which are not bioavailable to fish and other aquatic organisms. One commonly found compound, silver sulfide, was approximately one million times less toxic than free silver ions.

To make matters worse, water quality criteria and standards are derived from testing of free silver ion while compliance monitoring tests regulate all forms of silver through total silver measurements, as if all silver species are equivalent in toxicity to free silver species. Most States have followed EPA and taken this approach. Only New York and Texas have adopted water quality standards based on the free, ionic form of silver. EPA's National Toxics Rule (required by the 1987 Clean Water Act amendments) has now implemented EPA's "guidance" silver criteria in 11 states and 2 territories. Extensive comments have been filed by the Silver Coalition and its members documenting concerns with EPA's water quality criteria for silver and aspects of the National Toxics Rule, urging recognition of the lack of bioavailability of silver compounds.

EPA's own experts support the Silver Coalition's point-of-view, as noted above. EPA is moving in the right direction, but a well-defined schedule is needed to facilitate the involvement of both the States and the regulated community in this revision of silver water quality criteria and related requirements. This schedule is important, as these revisions are very time-critical to affected health care facilities and other sectors of the photoprocessing industry, because existing regulatory processes are moving forward in many States without having this new scientific information taken into account.

The Silver Coalition legislative proposal calls for the Science Advisory Board to summarize the current science of metal speciation and bioavailability, including that for silver, within a specified time. At the conclusion of this evaluation, EPA would then be required to propose any appropriate changes in their water quality criteria within a second specified period.

Further Explanation of Recommendation #2

REQUIRE STATES TO CONSIDER ADVANCEMENTS IN WATER QUALITY SCIENCE –
Section 303 should be amended to require States to consider advancements in water quality science during their triennial water quality standards review.

Upon completion of the SAB report and EPA's water criteria modifications, State environmental agencies would then review both actions to determine appropriate changes in their water quality standards during the normal triennial review process required by Section 303 of the Clean Water Act. Following review and comment, State water quality standards for silver could then be updated to reflect the substantial advancements in water quality science.

The Silver Coalition legislative proposal, however, reserves the authority of the Administrator to issue guidance at any time that makes current water quality criteria and standards more reflective of good science, by allowing the use of a dissolved metal concentration in determining compliance with a water quality standard or establishing effluent limitations.

Further Explanation of Recommendation #3

PROVIDE INTERIM DELAY IN "BEYOND BAT" REQUIREMENTS FOR WELL-CONTROLLED SILVER SOURCES – *Section 307 should be modified to specifically allow EPA or the States to postpone water quality standard-driven permit requirements, beyond Best Available Technology Economically Achievable (BATEA), for silver for a period up to five (5) years. This allowance will enable Federal and State agencies to fully consider the state-of-the-art on silver's fate and effects in the environment. In those instances where postponement occurs, it will be conditioned on a Code of Management Practices developed and approved by the POTW and State agency to assure the maximum recovery and minimum release of silver by photoprocessors or other silver users.*

Stringent water quality limits based on total silver require POTWs to impose pretreatment standards well beyond the capability of the BATEA used in the photoprocessing industry segment. While removal of small amounts of additional silver can be accomplished by imposing such low pretreatment levels, the costs incurred bear no reasonable relationship to the resulting environmental benefits. In fact, it appears that any benefits are outweighed by new environmental concerns raised by alternative treatment. Wash water treatment facilities require the use of corrosive acids and bases in small business settings, and haul-away results in additional diesel air emissions to transport solutions to regional treatment sites. These approaches are also very expensive.

To allow the advances in water quality science to be properly incorporated into silver water quality criteria and standards, a temporary relief mechanism is needed. This will prevent the current standards and unachievable pretreatment requirements based on them from driving out small businesses, increasing the cost of health care, and adversely affecting many local economies. As part of the Clean Water Act reauthorization, the Silver Coalition is recommending that EPA and delegated States be authorized to temporarily suspend "beyond BAT" water quality based permit limits for POTWs and the related requirements for indirect dischargers, for a period up to 5 years.

The Silver Coalition recognizes, however, the importance of maximizing the recovery of silver and minimizing its release to the environment. Working with representatives of POTWs, States, and EPA, the members of the Silver Coalition will prepare a model Code of Management Practices to clearly define:

1. The Best Available Technology Economically Available methods and practices that should be used in each segment of the photoprocessing industry, from hospitals, dental offices, and photographic laboratories, all the way to 1-hour mini-labs in shopping centers.
2. Water conservation measures that should be employed to reduce wastewater discharges to POTWs.
3. Installation and use of recovery equipment to maximize the recovery of silver.

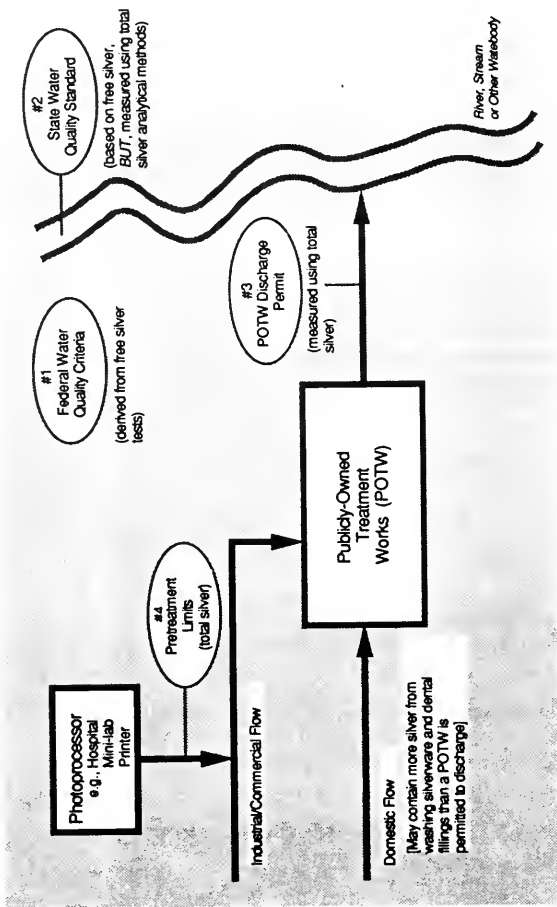
4. Operating and maintenance practices that will assure the most consistent performance of this equipment.

This generic model can then be used in individual permits as necessary where water quality standards will otherwise cause individual POTWs to impose pretreatment limits where the costs to be incurred will bear no reasonable relationship to the projected environmental benefits.

After 5 years, a complete cycle of the States' triennial water quality standards review will have occurred. Once State water quality standards are re-considered and appropriately updated, this interim provision will then lapse.

The Silver Coalition recommends that these changes be incorporated into any legislation reauthorizing the Clean Water Act. These proposals will allow adjustments to the water quality and pretreatment program for silver, reflecting our latest scientific knowledge about silver in the environment and its relative toxicity. They will allow us to avoid billions of dollars in unneeded expenditures, without any risk to the environment.

The Impact of Water Quality Criteria on Photoprocessors



Silver Coalition

**Recommended Changes to the Clean Water Act
Proposed by the Silver Coalition**

1) Statutory recognition of speciation and SAB study (amendments to section 304(a)):

Sec. . Section 304(a) of the Clean Water Act is amended by adding the following new paragraph:

"(9)(A) The Science Advisory Board shall conduct a review of the latest scientific knowledge as to the relationship between the species of metal, its bioavailability and the potential for toxicity, and the desirability of modifying water quality criteria to reflect that knowledge by using measurements of dissolved metal concentration or of toxic species of metal rather than measurements of total recoverable metal. Such review shall be completed, and the results of such review submitted to the Administrator and the Congress, as expeditiously as practicable but not later than December 31, 1994, or six months after the date of enactment of the Clean Water Act Amendments of 1994, whichever first occurs.

"(B) Not later than six months after the date of receipt of such results, the Administrator shall take such action as may be appropriate to incorporate the results of such review into water quality criteria published under this subsection. In particular, the Administrator shall modify such water quality criteria for silver, if necessary, or publish information as to the interpretation of such criteria for silver, to reflect the latest scientific knowledge as to the relationship between the species of silver and the potential for toxicity, using measurements of dissolved silver or of toxic species of silver rather than measurements of total recoverable silver."

2) Incorporate advances in knowledge on metals toxicity into triennial review process (amendments to section 303(c)(2)):

Sec. . Section 303(c)(2) of the Clean Water Act is amended by adding the following new subparagraph:

"(C) Whenever a State reviews water quality standards pursuant to paragraph (1) of this subsection, or revises or adopts new standards pursuant to this paragraph, such State shall adopt criteria for silver that reflect the latest scientific knowledge as to the relationship between the species of silver and the potential for toxicity, using measurements of dissolved silver or of toxic species of silver rather than measurements of total recoverable silver, in accordance with guidance published by the Administrator under section 304(a)(9). As part of such review, such State shall identify any substantial and widespread economic and social impact that is likely to result from a decision not to adopt, or from a decision to adopt, such revised criteria or measurements, and shall provide an opportunity for public comment on such information. Such identification and opportunity for comment shall be deemed to satisfy subsection (d)(4), and any modification of any effluent limitation resulting from the adoption of criteria under this subparagraph shall not be subject to section 402(o). Nothing in this paragraph shall be construed to limit or delay the use of any guidance of the Administrator interpreting water quality criteria to allow the use of a dissolved metals concentration measurement or similar adjustment in determining compliance with a water quality standard or establishing effluent limitations."

3) **Provide relief to indirect dischargers complying with a Code of Management Practices as well as a BATEA-based pretreatment standard, and on a temporary basis to the POTW with water quality-based effluent limitations (amendments to section 307(b)):**

Sec. . Section 307(b) of the Clean Water Act is amended by adding the following new paragraphs:

"(5) The Administrator, or the State in the case of a State with an approved permit program under section 402(b), may modify the permit conditions and effluent limitations for any publicly owned treatment works to defer for a period not to exceed five years compliance with any effluent limitation derived from a water quality standard for silver beyond that required by section 301(b)(2), notwithstanding the provisions of sections 303(d)(4) and 402(o). Any such modification and deferral shall be contingent on compliance with the applicable requirements of paragraph (6) by all affected indirect dischargers into such publicly owned treatment works, and a program of enforcement by such publicly owned treatment works and the State to assure such compliance.

"(6) Any indirect discharger that is in a class of facilities for which a code of management practices has been developed in accordance with subparagraph (B) shall not be subject to any pretreatment requirement for silver (including any local limit) based on an effluent limitation for the publicly owned treatment works derived from a water quality standard for silver, prior to the expiration of the period provided in paragraph (5), if such facility--

"(A) is in compliance with a mass limitation or concentration level for silver attainable with the application of the best available technology economically achievable for such facilities, as established by the Administrator after a review of the treatment and management practices of such class of facilities; and

"(B) is implementing a code of management practices for silver recovery, operation, and waste management appropriate for the class of facilities of which such facility is a member, developed and adopted by representatives of such industry and the publicly owned treatment works of major urban areas, in cooperation with the Administrator and the States. Such code of management practices shall reflect acceptable industry practices to minimize the amount of silver introduced into publicly owned treatment works or otherwise entering the environment from such facilities. At a minimum, such code of management practices shall address--

"(i) the use of the best available technology economically achievable, based on a review of the current state of such technology for such class of facilities, and of the effluent guidelines for such facilities;

"(ii) water conservation measures available to reduce the total quantity of discharge from such facilities to any publicly owned treatment works;

"(iii) opportunities to recover silver (and other pollutants) from the waste stream prior to introduction into any publicly owned treatment works;

"(iv) operating and maintenance practices for the process at such facilities that minimize the amount of silver introduced into publicly owned treatment works and assure consistent performance of the management practices and treatment technology specified under this paragraph."

[Note: An example of how proposed section 307(b)(6) is intended to work would be a code of management practices for silver recovery and waste management, developed and adopted by representatives of the *photoprocessing industry* and the publicly owned treatment works of major urban areas, in cooperation with the Administrator and the States. Such a code of management practices would reflect acceptable industry practices in the photoprocessing industry to minimize the amount of silver introduced into POTWs or otherwise entering the environment. Among other examples of appropriate requirements, a code of management practices for the photoprocessing industry may require—

- (i) all silver-bearing wastes, including fixers, bleach-fix solutions and superstabilizers, to be treated in a silver recovery system;
- (ii) management practices to assure acceptable loading rates from the silver recovery system and that no untreated solutions are discharged to the POTW;
- (iii) the use of a wash water limiter or control system to limit water use to the period when film is being processed, and to reduce water use to the minimum levels sufficient for adequate washing;
- (iv) adequate record-keeping as to the quantity of silver-bearing waste generated, testing of the silver recovery system, and the quantity and destination of any silver-bearing waste removed from the premises other than by introduction into the publicly owned treatment works;
- (v) installation and use of any equipment or processing chemicals which permit recycling or regeneration of spent solutions that become commercially available, and for which the costs of installation and use bear a reasonable relationship to the effluent reduction benefits.

For the purposes of this example, the term "photoprocessing facility" includes any health care facility, commercial photoprocessing or photofinishing facility, school or government photoprocessing facility, printing facility, or graphic arts facility, with respect to its processing of photographic film or paper.]

WRITTEN STATEMENT
OF THE
SYNTHETIC ORGANIC CHEMICAL MANUFACTURERS ASSOCIATION
TO THE
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
SUBCOMMITTEE ON CLEAN WATER, FISHERIES AND WILDLIFE
UNITED STATES SENATE
REGARDING
S. 1114 - THE WATER POLLUTION PREVENTION AND CONTROL ACT OF 1993

SEPTEMBER 30, 1993

Synthetic Organic Chemical Manufacturers Association
Written Statement on
S. 1114 -- The Water Pollution Prevention and Control Act of 1993

I. INTRODUCTION

The Synthetic Organic Chemical Manufacturers Association (SOCMA) is pleased to have the opportunity to submit this written statement to the July 1 hearing record on S. 1114, the Water Pollution Prevention and Control Act of 1993. Clean water is a goal that is strongly supported by SOCMA and its members. However, S. 1114 is of particular concern to SOCMA because it includes several provisions that SOCMA believes will impose costly burdens on its members without improving water quality or public health. SOCMA is a trade association serving more than 220 companies that have a common interest in the manufacture, distribution and marketing of organic chemical products. The majority of SOCMA's members are indirect dischargers with annual sales of under \$40 million. SOCMA's member company operations are representative of a much larger number of organic chemical manufacturers throughout the United States.

SOCMA's members are typically batch chemical manufacturers which produce organic chemicals used in thousands of products vital to consumers and U.S. industry. More than 2,000 batch processing facilities produce over 95 percent of our nation's 50,000 chemicals and polymers. This unique niche in the chemical industry is innovative, entrepreneurial and customer-driven. Batch manufacturers make smaller quantities of chemicals which have specific performance applications. Batch processing is also used for research and development projects. The chemicals and polymers produced yearly in batch processes have a value in excess of \$60 billion.

II. BACKGROUND

Much has been done in the past 25 years to improve the quality of the nation's surface waters. The greatest improvement, by far, has resulted from

the pretreatment of industrial wastewaters prior to their introduction to publicly owned treatment works (POTWs) and from reduction and control of point sources of pollution from industry and municipalities. EPA and others have reported that point source discharges account for only about 25 percent (nine percent from industry and 16 percent from municipalities) of today's pollution of surface waters. SOCMA strongly urges Congress to enact laws that recognize these accomplishments and that will bring all remaining sources of surface water, including nonpoint sources, under equally adequate control.

III. THEMES TO BE INCORPORATED IN A CWA REAUTHORIZATION BILL

SOCMA believes that a reauthorization of the Clean Water Act (CWA) without substantive changes in the law is the best course at this time. Congress should allow the current law more time to be fully implemented before mandating substantive changes to the existing program. However, since S. 1114 has been introduced in the Senate and is the subject of hearings, SOCMA would like to submit comments on this bill to the July 1 hearing record, the subject of which was "toxics".

There are certain themes that SOCMA believes should be incorporated in a CWA reauthorization bill, including: a focus on nonpoint source pollution; a watershed management approach; voluntary pollution prevention programs; national policy on mixing zones; and, permit fees for administering the National Pollutant Discharge Elimination System (NPDES) permit program. Each of these issues is explained in more detail below.

A. Focus on Nonpoint Source Pollution

SOCMA believes that a CWA reauthorization bill should focus on nonpoint sources of pollution, since they are a significant cause of the nation's water

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quality problems. If EPA focuses attention and resources on nonpoint source pollution, significant improvements in water quality can be achieved. Instead of continuing to focus on point source control, Congress should use CWA reauthorization as a meaningful vehicle to begin to substantially reduce the nonpoint source problems.

B. Watershed Management Approach

SOCMA supports a watershed management approach to achieving water quality. As EPA has testified, it can no longer be assumed that a national approach will solve all local water quality problems. Problems differ from watershed to watershed and proper solutions will also differ from place to place. SOCMA suggests that a watershed management program be developed that incorporates site-specific concerns.

C. Pollution Prevention

SOCMA strongly supports the concept of pollution prevention, and embraces a philosophy of environmental risk reduction. There are methods for achieving pollution prevention goals, including source reduction, in-process recycling, recycling and energy recovery. SOCMA believes that an effective pollution prevention program must provide companies with flexibility to meet regulatory requirements and must recognize the large differences in product mix, individual facility size and production among chemical manufacturers.

While SOCMA supports the concept of pollution prevention, it is important to note that, given the nature of batch manufacturing operations, quantification goals are inappropriate for this type of operation. A mandated pollution prevention target may not be achievable for these operations which, due to process changes and varying consumer demands, cannot forecast the

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feedstocks and processes which will be used to formulate their products. Thus, SOCMA believes that any legislation addressing pollution prevention should encourage development of site-specific multi-media pollution prevention programs with progress being measured on a site-specific basis.

D. A National Policy on Mixing Zones

SOCMA believes that it would be beneficial to develop a national policy that provides consistency in mixing zones between and among all states. The policy should be developed in a way that includes sound science, peer review, and widespread public comment. While SOCMA supports the development of a national policy on mixing zones, we oppose a policy that would require rigid standard approaches. Rather, SOCMA suggests that a national mixing zone policy allow for site-specific flexibility based on risk.

E. Permit Fees

SOCMA supports the concept of a permit fee and believes that fees are an appropriate source of revenue for administration of the NPDES permit program. However, levying a permit fee for purposes other than processing permit applications is inappropriate. Additionally, SOCMA believes that any permit fee should be proportional to the pounds of chemicals and other parameters discharged by the facility, such as biochemical oxygen demand (BOD).

IV. PROVISIONS OF S. 1114 THAT SOCMA OPPOSES

A. Process Changes and Product Substitution

SOCMA strongly opposes section 201 of S. 1114 which would require EPA, in the development of Best Available Technology (BAT) standards, New Source

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Performance Standards, and Pretreatment Standards, to "rely on and require, to the maximum extent practicable, source reduction measures and practices, including changes in production, products, or raw materials". This language imposes overly intrusive and unnecessary requirements on SOCMA's members, many of which are batch processors.

Much of the U.S. chemical industry is shifting from large scale manufacturing of chemical commodities to the manufacture of specialty products specifically tailored to a particular customer or market niche. To be successful, specialty product manufacturers must be able to respond rapidly to customer demands. Sometimes only one batch of a product is ever made, or there may be a brief or seasonal production campaign to meet a multi-batch order. Because of the specialized nature of this segment of the industry, batch chemical facilities are typically small, averaging fewer than 100 employees. It would be disastrous for the batch processing industry, which produces over 95 percent of our nation's 50,000 chemicals, to be subject to an EPA mandate that requires process changes and raw material changes. Section 201 is inflexible and inappropriate and would pose a serious threat to the competitiveness of the batch processing industry.

B. Domestic Sewage Exclusion

SOCMA opposes the provision in S. 1114 that eliminates the domestic sewage exclusion (DSE). Because this provision requires discharges of chemicals that are not subject to an effluent guideline to meet Resource Conservation and Recovery Act (RCRA) Best Demonstrated Available Technology (BDAT) standards, many of SOCMA's members will be subject to standards that their existing pretreatment facilities may not be able to meet. One reason that these indirect dischargers may not be able to meet the RCRA BDAT standards is because existing pretreatment facilities are designed to meet

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Clean Water Act Best Available Technology (BAT) limits, not RCRA BDAT standards. Additionally, BAT limits take into account matrix interferences that may occur as a result of the combined waste stream which are prevalent in the batch processing industry. BDAT wastewater standards are based, in contrast, on the treatability of individual hazardous waste streams, not the combined waste stream.

Elimination of the DSE would be particularly disruptive to batch processors which use biodegradable solvents such as acetone and methanol to synthesize many complex and beneficial products. Despite the employment of numerous pollution prevention techniques, it is virtually impossible to guarantee that small releases of spent acetone and methanol solvents will not enter a municipal sewer system. Small releases of water soluble solvents can occur during water washing and other product purification steps.

The Clean Water Act provides the appropriate forum for the regulation of hazardous waste in wastewater. SOCMA believes that most POTWs can properly treat most of the waste streams which they now receive. The existing mechanism for establishment of local limits will deal effectively with those waste streams that a particular POTW can not handle properly.

C. Ban on Toxic Chemicals

SOCMA opposes the provision in S. 1114 that requires EPA to list "highly toxic or toxic and highly bioaccumulative pollutants" and then to ban the discharge of these pollutants. Because a "toxic" chemical is present, it does not mean that the chemical is toxic to human health and the environment. The presence of a chemical does not determine its toxicity. Rather, it is the amount of the chemical that determines toxicity. Any restriction on the presence of chemicals should be based on risk assessment and other sound

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scientific approaches, rather than on an arbitrary listing of a specific number of chemicals.

D. Removal Credits

SOCMA opposes the provision in S. 1114 that would restrict the availability of removal credits. SOCMA believes that removal credits allow for cost effective, non-redundant capital and operating expenses. S. 1114 removes the existing provision for removal credits and, in section 204 (b), adds replacement language. The replacement language retains the language requiring that the removal credit "...not prevent sludge use or disposal ...in accordance with section 405,". This language would eliminate removal credits for compounds not provided with sludge limits or a determination that limits are not needed. It also adds a new restriction by requiring "the treatment ...results in the biodegradation of the toxic pollutant, as determined by the Administrator." The current CWA and regulations allow POTW removal by physical, chemical or biological means. The proposed provision would prevent removal credits for all the metals and perhaps some of the organics. It would also delay the issuance of removal credits until the Administrator makes a determination.

E. Fees for Effluent Guidelines

SOCMA opposes the section of S. 1114 that would require fees for the development of effluent guidelines for two reasons. First, SOCMA opposes the section because it does not set forth a mechanism to control the use of the money collected. Second, we believe that this section does not allow for representation of facilities that are regulated under these guidelines. There is no incentive for EPA to act in a cost effective manner. SOCMA believes that industry should not be responsible for funding the development

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of effluent guidelines. However, if a fee is to be imposed, SOCMA believes it should be proportional to the pounds of chemicals and other parameters discharged. We strongly believe that the development of effluent guidelines should be financed through general funding.

F. National Pollutant Discharge Elimination System (NPDES) Permits for Pretreaters

SOCMA believes that reauthorization of the CWA should not expand the scope of the National Pretreatment Program to include indirect dischargers in the NPDES program. The regulation of indirect dischargers currently resides with the states and POTWs. SOCMA believes that it is appropriate for the regulation of indirect dischargers to remain the responsibility of the states and POTWs. Further, the pretreatment section of S. 1114 fails to recognize that indirect dischargers are already subject to EPA's pretreatment regulations.

V. CONCLUSION

In conclusion, SOCMA believes that in reauthorizing the CWA, Congress should focus on the following concepts: focus on nonpoint source pollution; a watershed management approach; national policy on mixing zones; and permit fees limited to administering the NPDES permit program. If S. 1114 is to be the CWA reauthorization vehicle, Congress should revise the sections dealing with product substitution, DSE, the ban on toxics and removal credits.

#



Water Environment Federation

Formerly Water Pollution Control Federation

August 4, 1993

PRESIDENT

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The Honorable Bob Graham, Chairman
Clean Water, Fisheries and Wildlife Subcommittee
Senate Committee on Environment and Public Works
SH-456 Dirksen Senate Office Building
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Dear Senator Graham:

PRESIDENT-ELECT

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The Water Environment Federation submits the following comments on S. 1114, the Water Pollution Prevention and Control Act of 1993, and requests their inclusion as part of the record of the recent Clean Water Act reauthorization hearings held by the Clean Water, Fisheries, and Wildlife Subcommittee. These comments summarize WEF's views on a number of provisions contained in S. 1114. More detailed comments on specific provisions will be submitted in the near future.

VICE PRESIDENT

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The Water Environment Federation (WEF) is a not-for-profit technical, educational and professional organization devoted to providing leadership and guidance in the preservation and enhancement of the global water environment. Founded in 1928, our more than 40,000 members include engineers, scientists, wastewater treatment plant operators and managers, and others working in state and local government, federal agencies, academia, industry, and private practice. In short, our members are the professionals involved directly in restoring and protecting the nation's water quality.

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WEF supports reauthorization of the Clean Water Act and the overall direction of S. 1114. We believe it will help ensure continued progress under the Clean Water Act in maintaining and enhancing water quality. A number of concerns and suggested improvements which we raised to Senator Baucus in comments submitted on S. 1081 in the 102nd Congress have been addressed in this bill. We appreciate greatly the attention that was paid to WEF's previous comments, as well as your willingness to receive our input on S. 1114.

PAST PRESIDENT

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Our comments are divided into three sections: provisions supported by the Federation; provisions with which we are concerned, and; additional issues which WEF believes should be addressed in the forthcoming legislation.

EXECUTIVE DIRECTOR

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**1. PROVISIONS IN S. 1114 SUPPORTED BY THE WATER ENVIRONMENT
FEDERATION**

Funding

* WEF supports the baseline \$2.5 billion reauthorization of State Revolving Fund (SRF) capitalization grants through FY 2000. Funding far above this level will be needed, however, to meet currently identified, as well as previously unforeseen, needs. [SECTION 101]

* WEF supports allowance for more types of projects to be eligible for SRF assistance. States should have the flexibility to address problems which are of greatest water quality significance. [SECTION 101]

* WEF supports allowing states to use matching grants to assist small communities. Small communities face unique financial, technical and compliance problems which need special attention. [SECTION 101]

* WEF supports continued funding for Section 106 state management grants. This funding is an important part of enabling states to manage the national water quality program. [SECTION 102]

* WEF supports an appropriate level of funding for federal water quality programs. EPA in general, and the Office of Water in particular, is being squeezed by ever-increasing responsibilities and mandates while their financial resources are being reduced. [SECTION 103]

Watershed Management/Nonpoint Source Pollution

* WEF supports using a watershed management approach to water quality. Many water quality professionals believe this is the best approach to water quality management because it takes into account multiple sources of pollutants, environmental benefits, attainability, cross-media impacts, and naturally-occurring conditions. [SECTION 302]

* WEF believes nonpoint sources of pollution should be controlled through pollution prevention and use of Best Management Practices. These sources, by their nature, are diffuse and have site-specific, highly variable impacts on water quality which can better be addressed through practices which recognize these factors. [SECTION 303]

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Combined Sewer Overflows

* WEF is in general agreement with the current draft EPA policy, but remains concerned about the lack of prioritization, flexibility, phased compliance, and other issues. [SECTION 401]

Stormwater

* WEF believes management measures should be the initial basis of regulation. Water quality limits should be used only if discharges are having a quantifiable adverse impact on receiving waters. A better understanding of wet weather impacts is needed in order to regulate stormwater discharges properly. [SECTION 402]

Water Conservation

* WEF supports, in general, provisions encouraging water conservation. Provisions which encourage water reuse specifically should be added. [SECTION 403]

Permit Fees

* WEF supports requiring states to collect fees to offset costs of water quality programs. WEF supports the principle of having dischargers and users pay the cost of water quality protection. [SECTION 501]

Technology Demonstration

* WEF supports encouragement of innovative and alternative technology. These technologies hold the promise of greater water quality protection and clean-up at lower costs. [SECTION 601]

Education

* WEF supports a national water quality education program. Ultimate responsibility for ensuring the protection of water resources begins at the individual level. [SECTION 606]

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2. PROVISIONS IN S. 1114 OF CONCERN TO THE WATER ENVIRONMENT FEDERATION

Water Quality Criteria

* WEF believes federally set criteria should not automatically become enforceable standards. States need flexibility to implement numeric limits which recognize local and regional variables. [SECTION 202]

Sediment Quality Criteria

* WEF believes the current state of scientific knowledge and understanding is insufficient to set sediment quality standards with confidence. More resources are needed for data collection and research. [SECTION 202]

Pollution Prevention

* WEF believes the focus should be on stimulating and encouraging pollution prevention through economic and regulatory incentives using a voluntary approach. WEF supports requiring site-specific pollution prevention planning, but does not believe that specific methodologies or uniform reduction levels, such as those outlined in S. 1114, should be mandated. [SECTION 205]

Monitoring

* WEF believes the proposed Water Quality Monitoring Council should include representatives from the professional environmental science/engineering community. Many of those directly responsible for monitoring water quality are engineers and other environmental professionals who work for, and with, municipal agencies and the private sector. [SECTION 301]

3. ADDITIONAL ISSUES WHICH THE WATER ENVIRONMENT FEDERATION BELIEVES NEED TO BE ADDRESSED:

CWA Goals

* WEF believes environmental priority setting and management, consideration of cross-media impacts, pollution prevention, and beneficial use of sludge (biosolids) should be added explicitly to the goals of the Act.

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Water Quality Research

* WEF believes specific authorization for basic (non-regulatory) water quality research is needed. Research is critical to better understanding water quality problems and developing improved clean-up and protection technologies and policies.

Peer Review

* WEF believes all new and revised water quality criteria, effluent guidelines, and pretreatment guidelines should be subject to peer review. Peer review is needed to ensure the technical and scientific soundness, as well as the credibility, of proposed criteria and guidelines.

Privatization

* WEF believes statutory and regulatory impediments under the Clean Water Act which discourage private sector investment in wastewater facilities should be addressed in reauthorization. All available sources of financing must be accessed in order to meet water quality needs and goals.

Small Communities

* In addition to giving states authority to provide targeted technical and financial assistance to small communities, WEF believes states should be given authority to allow alternative technologies to be used when doing so would provide an equivalent level of protection.

Sludge (Biosolids)

* Sludge (otherwise known as biosolids when it can be beneficially utilized) should be regulated solely under the CWA, and not as a hazardous waste under RCRA. Biosolids is a by-product of the wastewater treatment process, and overlapping or conflicting regulation should be avoided in order to promote beneficial uses.

The Water Environment Federation appreciates this opportunity to provide input into the Clean Water Act reauthorization process. We are preparing additional comments on provisions of this legislation which are still under review by our membership. We support continuance of a

Letter to Sen. Bob Graham
August 4, 1993
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strong and viable national water quality program, and would be happy to provide you with any additional comments or technical assistance on proposed amendments to the Act. Any questions should be directed to John Thorner, Director of Public Affairs, at (703) 684-2416.

We look forward to working with you to continue improving our nation's water quality.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles A. Sorber". The signature is stylized with a large, looped initial "C" and a long, sweeping horizontal stroke at the end.

Charles A. Sorber
President

**REQUEST FOR AUTHORIZATION FOR FUNDING
FOR
WATER ENVIRONMENT RESEARCH FOUNDATION**

**PRESENTED
TO
SENATE SUBCOMMITTEE ON
CLEAN WATER, FISHERIES, AND WILDLIFE**

BY

**GEORGE D. BARNES, P.E., DIRECTOR
BUREAU OF POLLUTION CONTROL
DEPARTMENT OF PUBLIC WORKS
CITY OF ATLANTA, GEORGIA
AND
CHAIRMAN, BOARD OF DIRECTORS
WATER ENVIRONMENT RESEARCH FOUNDATION**

AUGUST 4, 1993

Chairman Graham and members of the Clean Water, Fisheries, and Wildlife Subcommittee. My name is George D. Barnes and I am Director of the Bureau of Pollution Control for the City of Atlanta. I am here today on behalf of the Water Environment Research Foundation in my role as Chairman of the Board of Directors to ask for your support of our request for authorization at the level of \$5 million.

The Research Foundation is an organization that is very important to my city and to its other Subscribers. The Foundation was organized in 1989 and has grown steadily to its current level of membership of more than 160 Subscribers. These Subscribers represent more than 70 million people and include municipal wastewater utilities, industry, consultants and equipment manufacturers. Over the past three years our Subscribers have invested approximately \$3 million in the Foundation. During this same period, an added investment of \$2.7 million has been made by the federal government.

These dollars have been committed to fund more than 33 specific research projects that have been identified and prioritized by the Foundation's Subscribers, in the areas of Human Health and Environmental Effects, Integrated Resource Management, Collection and Treatment Systems, and Residuals Management. These projects will provide important information that will directly benefit environmental protection and the communities that we serve. By combining the municipal/federal investment with dollar-for-dollar matches from other sources, the Foundation has leveraged its investments to fund more than \$11 million worth of active research.

I would like to provide the committee with a brief overview of the organization and operating policies of the Research Foundation to illustrate how research projects are identified and managed and how our funds are used.

The Research Foundation is a not for profit corporation that is governed by a Board of Directors representing the general makeup of its Subscribers. In addition, the Board has established a Research Council, composed of nationally recognized experts from the municipal, academic, consultant, industrial and regulatory areas, to develop and oversee the Foundation's Research Program. The Board of Directors and the Research Council are composed of volunteers who serve with no compensation from the Foundation. The day to day activities of the Foundation are carried out by a full time staff of 8 professionals. Approximately 84% percent of our annual revenues are expended for research and approximately 16% percent for administration.

A Five-Year Research and Development Plan is developed annually, with full input from the Research Council and Subscribers, to cover specific areas of concern that have been identified and prioritized. A list of the current research projects and areas proposed for 1994 research is attached.

I will focus my remaining remarks by giving you some general background on several of the key projects that are underway in the areas that were previously mentioned.

RESIDUALS MANAGEMENT

The Foundation is concerned with both facilities which incinerate, and those which use a form of land disposal. Information derived from current and future studies will allow utilities more freedom in selecting the most suitable technologies for biosolids treatment and disposal, and will provide tools to promote public acceptance.

Our project on the Evaluation and Quantification of Biosolids Incinerator Hydrocarbon Emissions is looking at the extent to which incinerators represent a health risk. Recent health risk assessments are based upon total hydrocarbon measurements. This THC measurement is used for all organic compounds that might be emitted from a biosolids incinerator. However, cancer potency and risk factors vary, and are most often established on a compound by compound basis. Regulatory agencies have been forced to lump these compounds together forming a composite unit risk factor, while there is little data to verify the assumptions that underlie this grouping and the subsequent health risk assessments for biosolids incinerators.

The first phase of this project has been completed and the information that was obtained was extremely useful to EPA and the municipalities that utilize incineration, for the establishment of scientifically sound and acceptable criteria for the disposal of biosolids. The data provided by the Research Foundation will result in savings to municipalities of millions of dollars in fuel costs and will provide for an acceptable level of protection for human health and the environment.

In the area of land application we are conducting research that will Document Long-Term Experience of Biosolids Application Programs. This project will undertake the documentation of experiences at land application sites that have operated for more than ten years to provide the public and responsible officials with credible information on which to base policy decisions. This report will be available this year.

We are expanding our land application research through a cooperative project with the New York State Energy Resources Development Agency. This \$250,000 cooperative project will gather new data on the effects of thermal processing and natural elements on long term application of biosolids.

Again in the area of biosolids, the Foundation is participating in a project sponsored by the National Research Council which will study the Use of Treated Municipal Wastewater Effluent and Biosolids in the Production of Crops for Human Consumption.

Future biosolids research is addressing the Demonstration of Soil Remediation with Sewage Biosolids to Reduce Bioavailability of Metals. This will be of interest to municipalities and EPA in that it focuses on a beneficial use of wastewater biosolids and information on the relative bioavailability to mediate soil-born metals. The results of this study could help to clarify the issue of whether a new and inexpensive resource is readily available for remediating urban soils contaminated with lead from auto exhausts and other sources.

INTEGRATED RESOURCES MANAGEMENT

Integrated Resource Management is gaining popularity and looms on the horizon as a challenge to water quality professionals. Changes in current regulations are requiring utilities to look at the future responsibility for the entire watershed. The Foundation's Nonpoint Source research and Aquatic Ecological Risk research begins to put the watershed management puzzle together while providing information that will be of immediate use.

Federal NPS initiatives are forcing state governments to implement regulations before the resulting needs can be fully identified and researched. Many of the current point source regulations are based on dry weather standards. Because the loading of NPS primarily occurs during wet weather there is cause to question whether current standards should apply.

While there is no question that we are in support of reducing the environmental impact from nonpoint source pollution, there is a question as to the required level of treatment. By understanding the impact of NPS, it is possible that wet weather standards could be developed to fully protect the environment and at the same time reduce the costs associated with overly conservative controls.

One of the research projects underway looks at the Identification and Evaluation of Use-Attainability Methodologies for Aquatic Ecosystems. This research will provide a comprehensive and valid technical resource to conduct use-attainability analysis to accurately establish present uses and prediction of potential uses to develop the most appropriate management techniques to optimize the net environmental benefit. Also included will be a detailed discussion and support analysis of recommended methodologies and their applications.

We have also funded a project which Identifies Effective Sampling Protocols for Nonpoint Source Pollutants. The main premise for this research is that most monitoring systems are limited to a relatively small number of samples collected during storm events and lack continuous stream discharge measurements. This, in turn, produces inaccurate NPS load estimates and limits the development, calibration and testing of storm-loaded predicting models.

As one of the goals of the Research Foundation is to eliminate duplication of effort, this study will expand on data sets already under study and includes on-going sampling services provided by the U.S. Geological Survey. This research will determine the amount of suspended sediments, nutrients and pesticides transported by surface and subsurface waters draining from agricultural basins. The result will be the organization of sampling strategies for assessing the impact of nonpoint source pollutants in receiving streams and efficacy of agricultural best management practices. A final report will be prepared representing a systematic evaluation of storm event sampling requirements to estimate pollutant loading.

Other projects will provide research dollars for studies in the Use of Riparian Buffer Zones and Constructed Wetlands in Water Quality Management Programs and also research on Particulate and Particulate-Pollutants Interaction in Water Bodies and Wetlands Receiving Point and Nonpoint Discharges.

HUMAN HEALTH AND ENVIRONMENTAL EFFECTS

Closely related to the study of NPS is that of Aquatic Ecological Risk. In this instance we look at the magnitude and probability of human activities and natural phenomena on the watershed's ecosystem.

Because all hazardous materials cannot be tested in-depth, risk assessment protocols should be able to screen substances for environmental risks using minimal testing and evaluation efforts. Such protocols should be capable of delineating high risk situations that require immediate action, from those that have a potential but ambiguous risk, and those which have negligible risk.

We are currently funding a project which will Develop, Test, Validate and Refine Protocols for Assessing Aquatic Ecological Risk. While a large number of risk assessment protocols have been proposed or applied, none of these are currently comprehensive and flexible enough to be directly applicable to water quality criteria, standards and NPDES permit limitations. As more risk-based regulations are imposed it becomes increasingly important for research of this type which will produce a comprehensive methodology for using Aquatic Ecological Risk assessments to derive both numerical and narrative quality criteria and standards.

The Research Foundation has started another project in this area which will study the Time-Scale Effects of Chemically Toxic Events in Freshwater and/or Marine Ecosystems. This study will address the need to assess the time-scale impacts associated with point and NPS toxicity for pollutant loadings in different aquatic ecosystems. Understanding this issue is important in developing toxics discharge regulations for Combined Sewer Overflows (CSOs) and other stormwater events.

As an extension to this research, the last area I want to mention is the Foundation's involvement in the Great Lakes Initiatives. The Water Environment Federation's work group in this area has approached the Research Foundation to consider playing a role in the need for scientifically sound water quality criteria. The Foundation is in the process of developing an independent research plan to improve the database and science used to establish water quality criteria. The Foundation would then solicit and accept donations from municipalities, consultants, and industry, to contract for independent research.

As you have heard, the Water Environment Research Foundation is addressing the needs and concerns of the cities and utility agencies that are faced with making major financial commitments that have a direct impact on the citizens they serve.

The municipal subscribers to the Foundation are supporting the Foundation through annual subscription rates that are based on \$250 per million gallons of daily average treated flow. The minimum rate is \$250 for the smallest facilities and it caps at \$75,000 for the largest facilities. To give you an idea, Atlanta is a 148 million gallon facility and our yearly subscription rate is \$37,000. Our elected officials have supported this investment because they realize that a return of many times this amount is obtained from the research work that is being done. For example, the amount of money Atlanta is saving on the incinerator hydrocarbon emissions study alone will pay our subscription rate for the next 10 years.

In addition to the financial contribution that is made annually by our Subscribers, many utilities are contributing direct support through the participation of staff members on the Board of Directors and the Research council. This includes Subscribers such as Erwin Odeal from the Northeast Ohio Regional Sewer District, Edward Wagner from the City of New York, Department of Environmental Protection, Terry Rolan from the City of Durham and Joe Stowe from Charlotte-Mecklenburg Utility in North Carolina, Gordon Voss from Metropolitan Waste Control Commission Minnesota, Kumar Kishinchan from the City of Philadelphia Pennsylvania, and John Lampe from the East Bay Municipal Utility District in Oakland, California.

Federal Funding previously received by the Research Foundation includes \$1.5 million in FY'91, \$.5 million in FY '92 and \$.7 million in FY '93, bringing the total to \$2.7 million of Federal Funding. The EPA is actively participating with the Foundation in the identification of research projects and in the selection of projects for which the federal funds will be allocated.

Through it's collaborative funding efforts, the Research Foundation has made an admirable start in addressing some of the nation's most pressing water quality research needs, however, there is much more that still needs to be done.

When utility directors such as myself go in front of our elected officials and rate payers to request support and funding for state and federally mandated environmental programs, we must have confidence that the mandates are based on sound and documented scientific information. In our view, it is essential that the federal partnership with the Research Foundation be continued so that we and the citizens that we all serve will be able to confidently support the programs that are required to protect and enhance the environment.

I again urge for you to support of our request for funding authority at the level of \$5 million.

I sincerely appreciate the opportunity to appear before you today and I would be pleased to answer any questions.

WATER ENVIRONMENT RESEARCH FOUNDATION

CURRENTLY FUNDED RESEARCH

Biodegradation of Organic Pollutants in Anaerobic Digestion

Comparative Efficiency of Chlorination-Dechlorination and UV Irradiation

Evaluation of Biodegradation Rates of Toxic Organic Chemicals

Assessment of Research Needs for Nutrient Removal from Wastewater

On-Line Monitoring to Control Transients in Wastewater Treatment

Low Emissions Sewer Systems for Industry

Optimization of Vortex Separator Removal Efficiencies

Identification and Evaluation of Use-Attainability Methodologies for Aquatic Ecosystems

Stripping and Volatilization in Wastewater Facilities

Sampling and Analytical Methods for Air Emissions Measurements

Control and Production of Toxic Air Emissions by POTW Odor Control Equipment

Vapor-Phase Biological Control of POTW Air Emissions

Use of Riparian Buffer Zones and Constructed Wetlands in Water Quality Management Programs

Transport and Fate of Pollutants in Sediments

Water Reuse Assessment

Document Long Term Experience of Sludge Land Application Programs

Evaluate and Quantify Sludge Incinerator Hydrocarbon Emissions

Polymer Characterization & Control in Sludge Management

Demonstration of the Soil Remediation with Sewage Sludge to Reduce Bioavailability of Metals

Long Term Fate of Land Applied Wastewater Materials

The Use of Treated Municipal Wastewater Effluents and Sludge in Production of Crops for Human Consumption

Survival and Regrowth of Disinfected Indicator Bacteria

Develop, Test, Validate and Refine Protocols for Assessing Aquatic Ecological Risks

Time-Scale Effects of Chemically Toxic Events in Freshwater and/or Marine Ecosystems

Collaborative National Study Using Molecular Techniques to Detect Hepatitis A Virus and Virulence factor

Genes in *E. coli*

WATER ENVIRONMENT RESEARCH FOUNDATION**PROPOSED RESEARCH FOR 1994**

Prediction of the Equilibrium and Rate Expressions that Describe the Dissolved and Particulate States of Metals in Wastewater

Secondary Clarification Assessment

Understanding the Impacts of NPS Snowmelt on Urban Receiving Waters

Particulates and Particulate-Pollutant Interactions in Water Bodies and Wetlands Receiving Point and Nonpoint Discharges

Small Wastewater Systems Research

Watershed Management Protocol

Establishing Sludge Stability Criteria

Influence of Polymer Chemistry on Sludge Products and the Environment

Bioassays and Measures of Toxicity Workshop

Risk Management Workshop

Water Quality Indicators Workshop

Improved Enumeration Techniques for Indicator Bacteria and Pathogens

Effects of Residual Disinfectants and By-Products in Aquatic Ecosystems

1996	1997	1993	1994	1995
Biodegradation of Organic Pollutants in Anaerobic Digestion			121	
Evaluation of Biodegradation Rates of Toxic Organic Chemicals		150	150	
Prediction of the Equilibrium and Rate Expressions that Describe the Dissolved and Particulate States of Metals in Wastewater		90	75	75
Secondary Clarification Assessment		60		
Nutrient Removal Research 200	200		75	100
Instrumentation and Monitoring Research 200			100	50
Sewer Systems Research 100			75	100
Source Control Workshop			30	
Development of a Comprehensive Fate and Transport Model for Treatment and Collection Systems 250				150
Advanced Wastewater Treatment Systems 200	300			150
Source Control Research 200				

INTEGRATED RESOURCE MANAGEMENT

<u>1996</u>	<u>1997</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Stripping and Volatilization in Wastewater Facilities		125	75	
Control and Production of Toxic Air Emissions by POTW Odor Control Equipment		143		
Use of Riparian Buffer Zones and Constructed Wetlands in Water Quality Management Programs		100	150	150
Understanding the Impacts of NPS Snowmelt on Receiving Waters		90	100	
Particulates and Particulate-Pollutant Interactions in Water Bodies and Wetlands Receiving Point and Nonpoint Discharges		135	200	
Small Wastewater Systems Research		60		
Watershed Management Protocol		45		
Water Reuse Research 300	300		100	300
Stormwater Management Assessment			70	
Nonpoint Source Pollution Research 150			100	200
Watershed Management Research 250	300			125
Stormwater Management Research 200	200			
Nonpoint Source Model Selection, Application, Calibration, and Validation 100	200			

RESIDUALS MANAGEMENT

<u>1996</u>	<u>1997</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Evaluate and Quantify Sludge Incinerator Hydrocarbon Emissions		100		
Demonstration of the Soil Remediation with Sewage Sludge to Reduce Bioavailability of Metals		75		
Establishing Sludge Stability Criteria		65		
Influence of Polymer Chemistry on Sludge Products and the Environment		135	75	
Measures of Metals Bioavailability			125	100
200	250			
Innovative Systems for Odor Control			100	200
200				
Demonstrating Sludge Stability				100
100	100			
Control of Air Emissions from Thermal Processing				
100	250			



HUMAN HEALTH AND ENVIRONMENTAL EFFECTS

<u>1996</u>	<u>1997</u>	<u>1993</u>	<u>1994</u>	<u>1995</u>
Time-Scale Effects of Chemically Toxic Events in Freshwater and/or Marine Ecosystems		200	200	200
Bioassays and Measures of Toxicity Workshop		20		
Risk Management Workshop		30		
Water Quality Indicators Workshop		30		
Improved Enumeration Techniques for Indicator Bacteria and Pathogens		90	75	75
Effects of Residual Disinfectants and By-Products in Aquatic Ecosystems		90	75	75
Bioassays and Toxicity Research 300	300		100	150
Risk Management Research 300	400		100	150
Survival and Reestablishment of Ultraviolet Irradiated Indicator Bacteria			50	50
Water Quality Indicators Research 200	300		100	150

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ISBN 0-16-043358-4



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