IMPLEMENTING LEGISLATION FOR THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

HEARING

BEFORE THE

SUBCOMMITTEE ON
ECONOMIC POLICY, TRADE AND ENVIRONMENT
OF THE

COMMITTEE ON FOREIGN AFFAIRS
AND

COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

FIRST SESSION

NOVEMBER 16, 1993

Serial No. 103–83

(Committee on Merchant Marine and Fisheries)

Printed for the use of the Committee on Foreign Affairs and the Committee on Merchant Marine and Fisheries

U.S. GOVERNMENT PRINTING OFFICE
77–750 CC WASHINGTON : 1994

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402
ISBN 0–16–044141–2

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IMPLEMENTING LEGISLATION FOR THE PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

TUESDAY, NOVEMBER 16, 1993

HOUSE OF REPRESENTATIVES,
COMMITTEE ON FOREIGN AFFAIRS,
SUBCOMMITTEE ON ECONOMIC POLICY, TRADE AND ENVIRONMENT, JOINT WITH THE COMMITTEE ON MERCHANT MARINE AND FISHERIES,

Washington, DC.

The subcommittee met, pursuant to call, at 1:30 p.m., in room 2172, Rayburn House Office Building, Hon. Sam Gejdenson (chairman of the Subcommittee on Economic Policy, Trade and Environment) presiding.

Mr. GEJDENSON. The Subcommittee on Economic Policy, Trade and Environment meets today with the Merchant Marine and Fisheries Committee to discuss Antarctica and the environment.

In 1991, the United States and other Antarctic Treaty countries agreed to a Protocol on Environmental Protection. This agreement establishes tough new environmental rules for all human activities in Antarctica, from the conduct of scientists to the behavior of tourists.

In order for the United States to ratify the Environmental Protocol, Congress must approve implementation legislation governing American activities in Antarctica. We have called today's hearing to examine the Clinton administration's views on the appropriate implementing legislation, as well as the views of the private sector.

The State Department has forwarded draft implementing legislation to Congress, and the Clinton proposal is a very good beginning. I look forward to working with the administration over the next few months to fine-tune their proposal.

Some of today's witnesses have raised concerns about the administration's Antarctica proposal. They argue that the proposal does not apply NEPA to Antarctica activities carried out by the United States jointly with other nations. The proposal would also allow for untreated solid waste to be discharged directly into Antarctic waters, and would allow for the incineration of waste in Antarctica. I am confident that we can resolve these important issues with the administration before Congress begins consideration of this legislation next February.

Although Antarctica is far from our shores, the continent is of critical importance to our country. Important scientific research on the history of the earth and the working global environment is car-

ried out in Antarctica. This scientific research is dependent upon the pristine nature of the Antarctic environment. The United States must clean up its act in Antarctica, not only to allow for the continuation of useful scientific research, but also to preserve Antarctica's wilderness for future generations.

I thank today's witnesses for coming, and I look forward to their testimony.

For the record, without objection, we will place Chairman Studds' statement in the record.

If there are no other opening statements then for the record, we have the opening statements of Jack Fields, Curt Weldon and Gerry Studds.

[The prepared statements of Mr. Studds, Mr. Fields, and Mr. Weldon appear in the appendix.]

The panel witnesses today: David A. Colson, Deputy Assistant Secretary, Department of State, accompanied by R. Tucker Scully, Director, Office of Oceans, U.S. Department of State; Dr. Cornelius Sullivan, Director, Office of Polar Programs, National Science Foundation, accompanied by Lawrence Rudolph, Acting General Counsel, National Science Foundation; Daniel M. Bodansky, University of Washington Law School, representing the National Research Council of the National Academy of Sciences; Bruce S. Manheim, Senior Advisor and Scientist, Environmental Defense Fund; and Beth C. Marks, Director and Scientist, the Antarctica Project.

Your entire statements will be placed in the record. And in the order that I have introduced you, please feel free to proceed as you are most comfortable.

STATEMENT OF DAVID A. COLSON, DEPUTY ASSISTANT SECRETARY FOR OCEANS AND INTERNATIONAL ENVIRONMENTAL AND SCIENTIFIC AFFAIRS, U.S. DEPARTMENT OF STATE; ACCOMPANIED BY R. TUCKER SCULLY, DIRECTOR, OFFICE OF OCEANS, DEPARTMENT OF STATE

Mr. COLSON. Thank you, Mr. Chairman. I am pleased to be here today before this hearing to discuss legislation to implement the Protocol on Environmental Protection to the Antarctic Treaty. I have submitted prepared testimony and ask that it appear in the record.

About this time yesterday, I was concerned about this hearing, as the administration had not yet finalized its position on all aspects of the implementing legislation. I am glad, as you noted, to report that early this morning, we are able to provide a complete proposed bill. I know that it was late, and I apologize for that; but, nonetheless, note that this hearing did provide a catalyst to finally resolve some difficult issues that we had been struggling with.

Mr. Chairman, let me say a few words about the Environmental Protocol and then a few words about its implementation by the United States. The Protocol was signed on October 4, 1991, bringing to an end a long running negotiation among the Antarctic Treaty Consultative Parties on important environmental issues in Antarctica.

While much of the publicity surrounding this negotiation related to the minerals issues, whether or not there would be an indefinite

ban on mineral resource activity, and that was ultimately agreed that there would be, the truth is that the Protocol and its four Annexes set out what is the most complex and comprehensive international agreement on environmental issues, which has yet been negotiated. It sets a standard against which other international environmental agreements will be held for many years to come.

Its provisions on environmental impact assessment, protection and conservation of Antarctic flora and fauna, waste disposal and management, and marine pollution are far reaching and, again, I note the extraordinary degree to which these provisions break new ground in international practice for environmental protection of global commons.

Generally, the Protocol has been well received in the United States, as evidenced by the Senate's quick action last year to give advice and consent to ratification. It remains for the United States to adopt implementing legislation to ensure that the United States and our respective Federal agencies meet the various obligations of the Protocol. This has been a matter of substantial discussion within the U.S. community for many months, and was the subject of a NSC review process under the present administration.

Working in Antarctica is difficult enough, and regulating that work presents a real challenge. The matter under debate, however, is not whether the United States can or will meet its obligations, but how it will go about doing so. As I noted, work has not been completed on all provisions of an administration proposal for implementing legislation, and it has been formally transmitted to Congress. One major issue that had to be resolved was where the responsibility lies for promulgating regulations and issuing permits. Competing bills have been put forward which deal with this in various ways.

The regulatory responsibility of U.S agencies goes to the question: how the United States will meet its international obligations. After a great deal of discussion, the administration proposal before you sets out our view of the best and most efficient and effective way of dividing up the various regulatory responsibilities among NSF, NOAA, EPA, the Coast Guard and the State Department.

As outlined, the NSF Director would promulgate regulations on protection of flora and fauna, and of specially protected areas, in accordance with specific requirements drawn from Annex II of the Protocol; the NSF Director, with the concurrence of the EPA Administrator, would promulgate regulations on waste disposal and management, in accordance with specific requirements drawn from Annex III of the Protocol; the Secretary of Commerce would promulgate regulations on Antarctic mineral resource activity; the Secretary of State would promulgate regulations on the filing of advance notice of expeditions to and within Antarctica; and the Secretary of the Department in which the Coast Guard is operating would promulgate regulations on marine pollution.

The second question goes to: how would we ensure that our regulating agencies meet our international obligations. For what is really the first time, we considered whether related U.S. permitting activities should be subject to judicial review and whether citizens' suits should be authorized. This raised a number of issues. On the one hand, our desire not to disrupt unduly the U.S. Antarctic pro-

gram or to inhibit scientific research in Antarctica; on the other hand, the interest in promoting strong enforcement of U.S. environmental laws by provisions on judicial review and citizens' suits.

The proposal before you would provide for judicial review of final regulations the denial of petitions made in respect of rulemaking and final agency actions. It would also provide for citizens' suits. As crafted, the proposal would promote environmental protection and ensure oversight, yet doing so in a way that does not unduly affect the U.S. Antarctic research program.

To date, six states have now become party to the Protocol: Spain, Ecuador, Peru, France, Norway and Argentina. Our leadership in the negotiations of the Protocol was a key to the strength of important provisions on environmental protection within the framework of the Antarctic Treaty. We now have the opportunity to set the standard for domestic compliance provisions for other countries. Early action on this proposal will again demonstrate U.S. international leadership to implement the Protocol with determination and dedication.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Colson appears in the appendix.]

Mr. GEJDENSON. Thank you. Mr. Sullivan.

STATEMENT OF CORNELIUS SULLIVAN, DIRECTOR, OFFICE OF POLAR PROGRAMS, NATIONAL SCIENCE FOUNDATION; ACCOMPANIED BY LAWRENCE RUDOLPH, ACTING GENERAL COUNSEL, NATIONAL SCIENCE FOUNDATION

Mr. SULLIVAN. Thank you, Mr. Chairman, for holding this hearing and for inviting me to appear before you this afternoon. I am accompanied today by Larry Rudolph, Acting General Counsel of the National Science Foundation on my left.

Mr. Chairman, we greatly appreciate your holding what I understand to be the first hearing of your subcommittee on legislation to implement the Antarctic Protocol. We also appreciate the long-standing interest of Chairman Studds in Antarctica.

This hearing presents my first opportunity to testify in the U.S. House of Representatives since my appointment as Director of the Office of Polar Programs at the National Science Foundation. I would like to very briefly introduce myself to you. I have come to Washington following 19 years as a professor of marine biology and oceanography and Director of the Hancock Institute for Marine Studies, the University of Southern California. My research activities have focused on the ecology of marine life, from bacteria to whales, in the frozen ocean of the Arctic and the Antarctic. And I have had what I consider to be the very good fortune to have spent 13 seasons on the ice in Antarctica performing ecological research.

Since my arrival last May at the National Science Foundation, I have worked very hard to carry out the responsibilities of the U.S. Antarctic program, to conduct a world class science program in Antarctica, and to do so in a way that protects the environment. For many years, it has been well-known that NSF grantees perform excellent scientific research in Antarctica. Last month, scientists performing research in Antarctica discovered the largest ozone hole ever, the deepest and the most extensive one; a very significant contribution in our quest to address global environmental

problems. Also in October, a research worker in the Trans-Antarctic mountains reported the first dinosaur fossils from the Antarctic mainland.

It is less well-known, but equally deserving of notice, that NSF is wholeheartedly committed to protecting the Antarctic environment. I have recently returned from 2 weeks in Antarctica, and I should tell you that during my years as an Antarctic researcher, I observed enormous environmental improvements in Antarctica from about 1980 through 1989. These changes, however, were not nearly as dramatic as the improvements that I have seen made over the past 3 years.

I can tell you that McMurdo Station is clean and orderly. The Fortress Rocks area is clean, and the waste there is neatly lined up and securely packaged in containers for shipment to waste disposal sites outside of the Antarctic continent. But perhaps most importantly, I have found that the behavior of all of the people in Antarctica, whether they were grantees, or NSF staff, Navy or our contractors, had changed substantially to one of great personal environmental awareness. I would be willing to bet that one would be very hard pressed to find scraps of paper or even a cigarette butt in the streets of McMurdo these days. I think that reflects much on the programs' change, particularly in the past 3 to 5 years.

In my new position, I have met personally with representatives of many of the environmental groups, and I have also convened several group meetings with the environmental community and congressional staffers to discuss Antarctic environmental and scientific activities. I have also just hired three full-time employees with environmental compliance responsibilities. One individual will lead NSF's effort to integrate NEPA into our program. And all of these professionals are already in Antarctica right now monitoring compliance with the Antarctic Conservation Act, including waste management practices.

We are pleased that after a year of negotiation, the interagency group has reached agreement on legislation to implement the Antarctic Protocol. Agencies including State Department, EPA, NOAA, DOD, Coast Guard, Justice, Interior and NSF have spent many hours in this cooperative effort hammering out the details of this bill. We believe that the Clinton administration's bill best achieves the appropriate balance between protecting the Antarctic environment and maintaining sound, scientific program.

It is our opinion that the Clinton administration's bill takes advantage of the expertise lodged in various Federal agencies, and provides for comprehensive protection of the Antarctic environment without unreasonably limiting the flexibility of regulating agencies. Mr. Chairman, NSF shares your goal of implementing the Protocol as quickly as possible, and we look forward to working closely with you, Chairman Studds and your respective committees to enact the implementing legislation proposed by the Clinton administration.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Sullivan appears in the appendix.]

Mr. GEJDENSON. Thank you. Mr. Bodansky.

STATEMENT OF DANIEL M. BODANSKY, UNIVERSITY OF WASHINGTON SCHOOL OF LAW, REPRESENTING THE NATIONAL RESEARCH COUNCIL OF THE NATIONAL ACADEMY OF SCIENCES

Mr. BODANSKY. Thank you, Mr. Chairman. I am Daniel Bodansky, Assistant Professor of Law at the University of Washington. My area of specialization is international environmental law. From November of last year until July of this year, I served as a member of the Committee on Antarctic Policy and Science of the National Research Council's Polar Research Board. The committee's findings and recommendations are contained in its report, Science and Stewardship in the Antarctic, which we believe should contribute to Congress' deliberations on this subject.

Dr. Louis Lanzerotti, Chairman of the committee, regrets he is unable to be here today. For the record, I am submitting his detailed written statement, but will highlight now several of the key findings of the committee's report.

The NRC Committee was charged with four tasks: first, to identify the possible impacts on science from expanding human activities in the Antarctic; second, to evaluate the possible impacts on science projected from various political, institutional and organizational scenarios being considered for managing human activities in the Antarctic; third, to provide an independent evaluation of U.S. policy options and their possible effects on the structure and functioning of science within the Antarctic Treaty system and within the United States; and fourth, to provide specific policy recommendations on the role of the Antarctic scientist in the policy process.

The committee consisted of 12 members having a broad range of experience, including six scientists with research experience in the Antarctic, and other individuals having expertise in research management and administration, environmental policy and management, international and national environmental law, and tourism. Support for the committee's effort was provided by the Department of State and the National Research Council.

The implementation of the Protocol on environmental protection to the Antarctic Treaty is a subject of great importance. The Environmental Protocol is intended to protect the Antarctic environment, and makes the objective of stewardship a principle objective of the Antarctic Treaty System. At the same time, the Antarctic Treaty provides, and the Environmental Protocol specifically recognizes, that the primary purpose of human presence on the continent is to conduct scientific research. U.S. legislation and regulations to implement the Protocol should reflect these two goals in a balanced, integrated manner so science and stewardship in Antarctica are mutually reenforcing, rather than conflicting.

The Protocol should be implemented by domestic legislation that establishes a flexible, open process of decisionmaking on environmental issues, rather than rigid rules that might ultimately fail to adequately protect the environment or might make science so difficult to conduct that the best scientists are discouraged from working in Antarctica. If the implementing regulations do not provide the flexibility to allow for changes in methods and equipment after

initial proposals are submitted, it might not be possible to take advantage of recent technological advances.

Thus, the committee recommends: As a guiding principal, implementing legislation and regulations should provide a process based on appropriate substantive requirements, such as those in Article 3 of the Environmental Protocol, rather than a prescription for meeting the requirements of the Protocol. The process should be balanced so as to provide flexibility as well as clarity for meeting requirements.

In assigning responsibilities to implement the Protocol, the committee believes the National Science Foundation should be kept at the center of Antarctic science and its specific governance, while taking greater advantage of other agencies in sharing the burden of program management. To accomplish this, the committee makes the following recommendations:

First: The existing management relationship between the National Science Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects and their approval, funding, and oversight should remain intact, modified only as new scientific and environmental requirements might suggest.

Second: The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other Federal agencies have significant and relevant technical expertise—for example, the EPA for solid and liquid waste—the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.

Third: Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the Federal agency that would normally make such decisions in the United States. For example, the EPA would grant a permit to the NSF for a wastewater treatment facility and would conduct periodic inspections.

Fourth, a special group should be established to provide general oversight and review of: proposals on the concept, location, design, et cetera, of major U.S. facilities, or significant alterations to existing facilities; environmental monitoring activities; and NSF program actions to ensure compliance by U.S. personnel (i.e., scientists and others supported by the government) as required by the Protocol and implementing legislation.

From the beginning of the Antarctica Treaty System, transparency, that is the openness of the process to the public and other interested parties, has been an important component of the System's governance. The regulatory, permitting, oversight and assessment processes established by legislation should provide adequate opportunities for public participation. Such measures should include appropriate notice, opportunity for written comment and presentations at any public hearings, and decisionmaking on a record that takes public comment into account. The committee, therefore, recommends: Legislation implementing the Protocol should contain opportunities for public involvement similar to those

routinely established in domestic environmental and resource management legislation.

Five additional recommendations to the drafting of implementing legislation and consequent regulations are contained in Dr. Lanzerotti's written statement, and discussed in detail in the committee's report.

The committee did not make specific recommendations with regard to the issue of individual investigator liability and citizens' suits, which has been raised in the Senate, House and administration bills. This was purposely done in recognition that the Antarctic Treaty Consultative Parties are currently developing an additional annex on liability. Liability is particularly difficult to integrate into the harsh and unique setting of science in Antarctica. The potential exposure of individual scientific investigators and supporting research institutions to punitive sanctions could have a chilling effect on the creative conduct of science.

The committee, therefore, believes that in developing the annex, the Parties should seek input from the scientific community in order to minimize the potential adverse impacts of liability on the conduct of science. Since U.S. legislation must ultimately be consistent with any international liability regime, the committee suggests, and the Polar Research Board firmly believes, that the Congress may wish to defer addressing this issue of liability in implementing legislation until the international framework has been more clearly established and the negotiation of the annex has been completed.

In discussing the citizens' suit and liability issues, the committee recognized that access to the Antarctic is limited to narrow windows of time during the austral summer, 2 to 4 months, depending on the station. Additional requirements imposed by implementing legislation could create delays that compromise the quality or the carrying out of some research projects. Delays of even a few weeks or months could result in actual delays of up to 1 year in research projects. Such delays might compromise scientists' abilities to respond quickly to unanticipated natural events.

The committee is particularly concerned that delays or restrictions in the conduct of science and its logistics would adversely affect the very scientific research that is now largely directed at protecting and understanding the earth's environment.

In conclusion, the committee strongly believes that the implementation of the Protocol will be of benefit to Antarctic science, as well as the Antarctic environment. In the committee's view, science and environmental stewardship on the continent are linked hand-in-hand. The committee hopes the expeditious adoption of implementing legislation in the United States and ratification of the Protocol by the executive branch will help foster this relationship internationally.

On behalf of the Committee on Antarctic Policy and Science and the National Research Council, I thank the House Committee on Foreign Affairs, Subcommittee on Economic Policy, Trade and Environment, and the Committee on Merchant Marine and Fisheries for the opportunity to appear here today. Thank you.

[The prepared statement of Mr. Lanzerotti appears in the appendix.]

Mr. GEJDENSON. Thank you. Mr. Manheim.

STATEMENT OF BRUCE S. MANHEIM, SENIOR ATTORNEY AND SCIENTIST, ENVIRONMENTAL DEFENSE FUND

Mr. MANHEIM. Thank you, Mr. Chairman. I very much appreciate the opportunity to testify today. Unfortunately because I am losing my voice—perhaps fortunately for the committee—I will be very brief. I will only try to summarize the major points in a rather detailed written statement that I provided the committee today.

Specifically, I want to focus on the administration proposal and what, at least the Environmental Defense Fund believes to be inadequate about it. Let me just very quickly run through points. I will be happy to respond to any questions you or other members of the committee may have later on with respect to those points.

First, we believe, Mr. Chairman, that the administration proposal seeks to overrule a Federal Appeals Court decision rendered last—or earlier this year finding that the National Environmental Policy Act, or NEPA, applies to U.S. activities in Antarctica. We believe that the administration seeks to do that by creating a very large loophole surrounding U.S. participation in joint activities in Antarctica.

Second, Mr. Chairman, we are disappointed that the administration proposal is in many ways weaker than what is currently provided under existing law in the form of the Antarctic Conservation Act. Specifically, it does that in two respects. First, it would allow—the administration proposal would—for incidental taking of Antarctic wildlife, which is currently not permitted under U.S. law; and second, the administration proposal would not seek to establish the Comprehensive Pollution Control Program contemplated by Congress some 15 years ago when the Antarctic Conservation Act was adopted.

Moreover, Mr. Chairman, we are disappointed with the administration proposal in that it would allow incineration to proceed in Antarctica, despite a finding by the National Science Foundation earlier this year that its state-of-the-are incinerator on the continent still released substantial concentrations of dioxins; in fact, concentrations that exceed allowable EPA limits for large municipal solid-waste incinerators by an order of magnitude.

In addition, and unfortunately, the administration proposal rather incredibly would allow discharges of untreated sewage into Antarctic waters pursuant to standards that are weaker than those currently in the Clean Water Act governing activities here in the United States. Moreover, the administration proposal would not necessarily prohibit government vessels from discharging waste, including plastics and garbage, into the Antarctic Treaty area, and that is in direct contravention of the Act to prevent pollution from ships, at least as it applies to government vessels in their compliance with Annex IV of the MARPOL convention.

In addition, the administration proposal very narrowly construes, and we believe improperly implements, legally binding requirements in Article 3 of the Protocol, the so-called Article 3 principles, but also indefinitely defers any kind of action at all to control a burgeoning tourist industry in Antarctic. It only calls for a study

by the State Department for some 24 months to determine what, if any, actions would be taken at that point.

And finally, while the administration has today submitted to the committee a provision allowing for citizens' suits, and I have only had a rather brief opportunity to review that provision, it is still quite clear just based on a very preliminary review that it falls short of virtually every other citizen enforcement action, citizen suit provision in any U.S. environmental law.

I would be happy to answer any questions the committee may have, and I will stop at that point. Thank you.

[The prepared statement of Mr. Manheim appears in the appendix.]

Mr. GEJDENSON. Thank you. Ms. Marks.

STATEMENT OF BETH C. MARKS, DIRECTOR AND SCIENTIST, THE ANTARCTICA PROJECT

Ms. MARKS. Good afternoon, Mr. Chairman, and thank you for the opportunity to testify today on implementing legislation for the Antarctic Environmental Protocol. I am Beth Marks, Director of The Antarctica Project. This statement is presented jointly with Greenpeace and Friends of the Earth-U.S., and on behalf of the Humane Society of the United States, National Wildlife Federation, and the Sierra Club. Our millions of members urge your committees to take prompt action to enact strong implementing legislation for the Protocol and its five Annexes.

We would especially like to thank Chairman Studds for his leadership over the past years in identifying the issues that need to be addressed in implementing legislation, and for moving the implementation process forward by introducing H.R. 1066, the Antarctic Environmental Protocol Act.

Our organizations joined forces in the early 1980's with a common goal of providing Antarctica's near-pristine environment with long-lasting and comprehensive protection as a "World Park," in which human activities are regulated to minimize impacts. Our chief focus was to defeat the Minerals Convention and replace it with a comprehensive environmental protection agreement and a permanent ban on mining and oil drilling.

A significant milestone in that campaign was reached, as you know, on October 4, 1991, when the Antarctic Treaty parties adopted the Protocol. Its purpose, as you have heard, it to update and strengthen the Antarctic Treaty's environmental recommendations, and to make them legally binding on all visitors to the Antarctic.

Ratification of the Protocol is of paramount importance. Until it is ratified and enters into force, all activity will be guided by mostly outdated, and in many cases, voluntary recommendations, which do not provide for comprehensive protection for the environment.

The United States must take a leadership role in making the Protocol a reality. Ratification by the United States is fundamental to creating momentum within the Antarctic Treaty System toward ratification by all the Treaty parties and entry into force.

The United States should approach legislation not from the perspective of doing the minimum necessary to complete ratification, but instead from the standpoint of building on the Protocol. The Protocol and its Annexes should be viewed as minimum standards

to be augmented and strengthened. The standards contained in U.S. implementing legislation should be at least as stringent as the standards of existing domestic environmental law. Although six nations have already ratified the Protocol, none has passed implementing legislation. Enactment of strong, comprehensive implementing legislation will demonstrate the importance and significance that the United States attaches to this agreement, and will set a positive example for other Antarctic Treaty nations.

Implementing legislation should shape the roles and responsibilities of agencies to take advantage of their expertise, to ensure full compliance with the Protocol and to provide for meaningful oversight of U.S. activities. Given the remoteness of Antarctica, it is crucial that the regulatory structure established is transparent and facilitates public participation in the protection and governance of the region.

Our written statement provides our perspective on implementing legislation. And Mr. Manheim has articulated concerns with the administration's proposal; I would like to add our support to his statement. I would like to take a moment just to discuss implementing legislation from my own perspective. As a biologist, I spent two seasons at McMurdo Station conducting research. This experience not only gave me a love for the Antarctic, but it also alerted me to the impact that humans can have on its fragile environment, and also to the particular problems that scientists face operating not only under severe conditions, but having only a limited season in which to work.

In this context, I am sensitive to concerns by scientists that if too many permits are required, or if they have to spend an inordinate amount of time filling out forms, they will have precious little time left to conduct their research.

I can sympathize, but I do not believe that requiring all visitors to the Antarctic to take some time to evaluate the impact of their activities on the environment prior to travelling there will compromise their research. To be sure, it might mean starting the process a bit earlier. But, it should not effect the quality of the research or the scientists' ability to carry a project forward.

If anything, protecting the environment will enhance the quality of science. One of the primary reasons that scientists travel to the Antarctic to conduct research is because of the pristine nature of the environment and the minimal background noise. Implementing the Protocol will maintain this environment.

The proper perspective provided by the conclusion of the Protocol is that science will be even more important than before, and that its possibilities will be greater. I doubt that the Protocol will block any significant science from being carried out. In fact, now that the minerals question has been set aside, the political will to support globally significant science and long-term monitoring programs in a cooperative way should increase. This should result in a consequent decrease in environmental impacts caused by redundancy of support facilities.

The protection of Antarctica is not just an esoteric environmental issue. Antarctica represents 10 percent of the earth's land mass and plays a key role in regulating global environmental processes.

Mr. Chairman, the United States has a real opportunity to influence the way in which other parties give effect to the Protocol, if it chooses to act promptly and lead by example. We urge that Congress enact implementing legislation, which will ensure that the Antarctic environment is preserved for the peaceful purposes envisioned by its framers and for future generations. Thank you.

[The prepared statement of Ms. Marks appears in the appendix.]

Mr. GEJDENSON. Thank you. Well, Mr. Colson and Mr. Sullivan, you have heard what they have said at the other end, and some of what you propose here seems to be counterintuitive: that you can have a pristine environment and do research, and still place untreated waste into the water. What is your response?

Mr. COLSON. Well, Mr. Chairman, I——

Mr. GEJDENSON. I know you have one.

Mr. COLSON. Yes, I do have one. I think that a number of these questions are ones that the concerns are overstated in connection with the kinds of programs that are being run in Antarctica. I think it is a mistake to say that there is a loophole in the environmental impact assessment activities. The Protocol, which is what this legislation is about—it is implementing an international agreement—is very strong in this area. It requires international environmental impact assessment for all major products—projects, and the question is which country is responsible when there is a joint project. The question is one of efficiency and not duplicating efforts through two different EIA processes.

Certainly where it is agreed in a joint project that the United States is the responsible country for complying with the EIA requirements of the Protocol, there would be an obligation on the part of the United States to do this, and NEPA would apply to that kind of an activity. When the United States is basically the minority partner in a joint undertaking with another government, it will be that government's responsibility to comply with the EIA requirements. And I think I would like Mr. Scully to respond to the points about the ocean discharge and the incineration, if I might.

Mr. GEJDENSON. Mr. Scully is responsible for that?

Mr. COLSON. That is right.

Mr. SCULLY. I have not discharged recently, but I hope I will be down there again at some point.

First of all—with respect to discharge of sewage, first of all, the Protocol does, in fact, establish standards upon the discharge of liquid—of wastes into the sea. It prohibits the discharge, except under carefully circumscribed—carefully circumscribed conditions. Those kinds of——

Mr. GEJDENSON. It is treated waste?

Mr. SCULLY. There is—the provisions on sewage would allow untreated human waste to be discharged into the sea provided that it met certain criterion for the receiving body of water, in terms of dilution capability, disbursal, et cetera. The approach that is taken in the Waste Disposal Annex——

Mr. GEJDENSON. So——

Mr. SCULLY. Excuse me. Go ahead.

Mr. GEJDENSON [continuing]. You suggest this on the argument that dilution is the solution to pollution?

Mr. SCULLY. It has worked for penguins.

Mr. GEJDENSON. Yes, but it seems to me, I guess, the question is whether penguin waste has the same impact on the environment, and the bacteria that are introduced as human waste.

Mr. SCULLY. Understood, Mr. Chairman. That is—again, the approach in the Waste Disposal Annex is to seek to, wherever possible, to remove all waste from Antarctic, including liquid waste. So that the effort in the Protocol is to make sure that the kinds of things that get into municipal sewage systems in temperate climes, such as mainland United States, are not at all—do not enter the waste stream in Antarctic. So, you are dealing with a different kind of waste stream, first of all.

Secondly, I think it is recognized that the kinds of secondary treatment requirements, the techniques that are applied in temperate climes, many of which require temperature—high temperatures and biological activity, to permit biological activity, biological breakdown of pollutants do not work there.

So that I think the Protocol, while it does not match the standards of the Clean Water Act for instance, the United States seeks to apply high standards in a very extreme environment.

Mr. GEJDENSON. Well, Mr. Manheim and Ms. Marks, has he convinced you?

Mr. MANHEIM. I have great respect for Tucker, Mr. Chairman, but he certainly has not convinced me on this one. In fact, he would not even be able to convince the former director of the Division of Polar Programs for the National Science Foundation, who testified before the House Merchant Marine and Fisheries Committee last year, or perhaps it was earlier this year, that primary treatment of sewage out-fall does not suffice and that secondary treatment must be followed, at least at McMurdo Station.

Mr. GEJDENSON. Yes. Well, you still have not gotten Marks and Mayhem—Manheim behind you. [Laughter.]

Mr. GEJDENSON. It may create mayhem for you if you do not solve some. It seems to me that if Antarctica is important because of its pristine nature. If you look at previous attempts to properly dump things in the ocean so they do not bother anything, you will realize that we have been wrong a lot of the time. If this place is so pristine, then we should use an incredibly high standard when putting pollution into it. And human waste is a pollution in that atmosphere, it seems to me. Am I wrong?

Mr. SCULLY. Human waste in certain quantities is, as is—you know, it very much depends. Human waste in certain quantities is a nutrient. So, it depends on the—it depends on the quantity, and where it goes and how it is diluted.

Mr. GEJDENSON. But even as a nutrient, not that this is high volume; it disrupts what naturally exists down there. I am not a scientist here, but it seems to me you would want to keep it as pure as you possibly can.

Mr. SCULLY. I agree, Mr. Chairman, and I think that is the effort in the standards that are set forth in the Protocol and the standards that are set forth in the proposed legislation, which in a number of instances, go beyond the Protocol. But, I think it is also a question of being able to apply technologies and techniques that will work in Antarctica, and I think that is the challenge that faces all of us. I think that is the challenge that was addressed by the

former director of the National Science Foundation in the statement that Bruce referred to.

Everybody recognizes that one needs to do better. But doing better in this circumstance often will require adaptations of technology, and technologies that do not necessarily equate with what is used in climates where you do not have those kinds of extreme conditions.

Mr. GEJDENSON. Of the countries that are in Antarctic now, who has the toughest standards for environmental protection?

Mr. SCULLY. I am not sure that it is—I can answer that question. I believe the United States does.

Mr. GEJDENSON. Ms. Marks.

Ms. MARKS. From what I understand, Greenpeace, as you possibly know, has conducted several years worth of inspections. And according to some of the reports, they have found that the Italians have some of the highest standards. Undoubtedly, that is because they have had other bases to look at and to learn from. But from what I understand, they pretty much bring everything home and they have got quite high standards for the treatment of their wastes.

Mr. MANHEIM. If I could just add to that, Mr. Chairman, that the statement that the NSF representative made last year with respect to sewage treatment was based on precisely what the Italians are doing at their base in Antarctic, and that is secondary treatment.

Mr. GEJDENSON. And the incineration of waste, that is OK down there?

Mr. SCULLY. Mr. Chairman, I think that the point that was made about incineration is somewhat misleading. The legislation prohibits incineration in Antarctica, and provides that if incineration were to be considered in Antarctica, there would have to be first—there would have to be agreement between the Director of the National Science Foundation and the Administrator of EPA, and regulations would have to be promulgated, which includes standards that go beyond those that are incorporated in the Protocol and include standards that are drawn from the Clean Air Act. So there is no authorization of incineration in this legislation.

What it does recognize is that at some point in the future, incineration may be an environmentally sounder alternative than some of the other possibilities, including the possibility of removing large amounts, say, of wood and paper from Antarctic, which requires vessel transportation. So, it does not authorize incineration. It would prohibit incineration, unless a very significant obstacle course is surmounted, the purpose of which would be to ensure that incineration would only take place if it were the environmentally soundest option for dealing with disposal.

Mr. GEJDENSON. Ms. Marks.

Ms. MARKS. Well, according to the way I read this—and I am not a lawyer, so it is possible I am misreading this—but it seems that NSF at this juncture can make the decision about whether or not incineration proceeds. If they decide that it will proceed, then they concur with EPA on the emission standards. H.R. 1066, on the other hand, does prohibit incineration; but there is a clause in it that does state if time is needed, another year or so until incineration should be banned, then they would allow the incineration.

But NSF has come out—Dr. Sullivan made a statement back in the summer that stated that incineration would no longer occur. So, we do not understand why you cannot just prohibit it outright, since they have already said they have no intention of doing it.

Mr. GEJDENSON. Dr. Sullivan.

Mr. SULLIVAN. I would just like to point out or reiterate what Tucker Scully has said, that if we legislate against the incineration, any technological developments that improve it in the future might, therefore, be eliminated. It is not currently our intention, without further study, to incinerate waste. We are currently retrograding material out of the continent of Antarctica to the United States and it is being landfilled, or the same as being done in other countries who, in many instances, welcome the business of helping us deal with this environmental problem.

Mr. GEJDENSON. Well, I hope that between now and February, when we do a mark-up on this, that we can tighten up some of these provisions. And I think that if you look at our history, we have made so many mistakes in the environmental area. I remember once there was a study off of Long Island for the best place to drop solid waste as a dumping ground. After years of research, they pinpointed a spot, proceeded to dump. It turned out to be the place that sent the greatest amount of garbage back to shore; an occurrence they had not, I guess, accounted for.

So from lead standards which keep going down as far as what is acceptable; and radioactive exposure that we keep shrinking the numbers on; I would hate to see 10 or 15 years from now coming back and having lost opportunities because we dumped raw sewage into the waters, hoping the dilution would take care of it; or other activities that cause damage to our ability to gain the kind of information that I think we are all seeking in this.

Mr. SULLIVAN. Mr. Chairman, I would just like to point out that we are not dumping what is classically referred to as raw sewage. But under the Antarctic Treaty, it is considered primary treatment; that is, maceration, that is what is currently occurring. We have also planned for a sewage treatment plant to modernize the handling of sewage in McMurdo Station, and have advertised in the Commerce Business Daily for letters of interest by firms. We have received letters from at least five well thought of firms who have done work on sewage treatment plants—secondary sewage treatment plants in cold regions, such as Alaska. We are planning a meeting in January in McMurdo to consider overall design philosophies, standards that will need to be met, expected difficulties, some of which Mr. Scully mentioned, and how we might be able to address those difficulties. We will develop a project implementation scheme should we decide to go forward with this and have the resources to purchase, to ship, to build such a plant, and to test its functioning in this Antarctic environment.

So that is pretty much were we are with regard to this topic.

Mr. GEJDENSON. Mr. Rudolph.

Mr. RUDOLPH. Mr. Chairman, I would just like to say in regard to this point, counterpoint conversation, I would not want it to obscure the fact that I think among all of us at this table, there is a desire to balance both the environmental concerns in protecting Antarctica, as well as making sure that the science can be done.

And despite all of these discussions we have heard today, the issue is not so much whether or not we will protect the Antarctic environment, but how we go about it and what methods we pursue. And I do believe for those who have a tendency to live in the past, or to recall past activities and past action, the time now is to really simply move forward and to work together in order to accomplish what both the Clinton administration and I am sure your committee hope to do.

So, I would just like to point that out that that is at least an accepted concern. I certainly believe the administration feels strongly about that, and we should not lose sight of that common ground.

Mr. GEJDENSON. Thank you. I agree. I think there is no question that there is a significant body of activity that we agree on. It is important to point out that which is the debate is all about is always what we disagree on, but that is not to minimize how much we agree on. Is there agreement on the provisions for judicial review and citizens' suit? Does that make everybody happy here?

Mr. MANHEIM. Sorry to be, once again, somebody that disagrees. Again, Mr. Chairman, I only got this this morning, so I have not had a careful examination of it. But just looking at it quickly, it strikes me as one of the most restrictive citizens' suit provisions in U.S. environmental law.

Mr. GEJDENSON. Is that bad? I mean, I do not know that we want to make it impossible for citizens to sue. On the other hand, you know, the nature of our society is so litigious that we want to make sure that these are real activities, not just somebody that decides that no human should be in Antarctic and, therefore, decides to sue.

Mr. MANHEIM. My view, Mr. Chairman, is that the judicial system, albeit imperfect, already does have a mechanism for dealing with frivolous lawsuits. This citizens' suit provision proposed by the administration today, however, would substantially restrict access by citizens to court. For example, one section would require a citizen to provide up to 180 days notice to an agency before being able to bring an action to challenge that agency's failure to promulgate regulations within a date certain. You have to wait another 6 months for them to promulgate regulations where they have not met the deadline within 2 years of enactment of this legislation. That is just but one example of a number of problems with this, Mr. Chairman.

Mr. GEJDENSON. Mr. Rudolph, do you think 180 days warning is enough time?

Mr. RUDOLPH. Mr. Chairman, with all due respect to Mr. Manheim, he is not reading from the present state of the bill. And indeed, if you read the present version, I believe it is not 180 days.

Mr. GEJDENSON. How long is it?

Mr. RUDOLPH. Sixty days, the same as any other citizens' suit provision in domestic legislation.

Mr. GEJDENSON. Terrific. We have made some progress here already.

Mr. RUDOLPH. Thank you, Mr. Chairman.

Mr. GEJDENSON. And what we hope is that you all sit down between now and February and work at it some more to make sure

that both perceived and real differences are at least dealt with. Do we have agreement on that 60/180?

Mr. MANHEIM. Sorry, Mr. Chairman.

Mr. GEJDENSON. You may have to get back with it.

Mr. MANHEIM. I think—well, we can perhaps provide for the record——

Mr. GEJDENSON. Work that out.

Mr. MANHEIM [continuing]. Our mutual understanding of what this language does say.

Mr. GEJDENSON. Let me say that we want to look at this again. We are going to leave the record open for a week at this stage, so that you can submit any additional testimony. And we will contact you all, either individually or collectively, before February. The committee stands adjourned. Thank you.

[Whereupon, at 2:22 p.m., the subcommittee was adjourned.]

APPENDIX

Statement of Rep. Sam Gejdenson
Chairman, Subcommittee on Economic Policy, Trade and Environment
Implementing Legislation for the Protocol on Environmental
Protection to the Antarctic Treaty
November 16, 1993

The Subcommittee on Economic Policy, Trade and Environment meets today with the Merchant Marine and Fisheries Committee to discuss Antarctica and the environment.

In 1991, the U.S. and other Antarctic Treaty countries agreed to a Protocol on Environmental Protection. This agreement establishes tough new environmental rules for all human activity in Antarctica, from the conduct of scientists to the behavior of tourists.

In order for the U.S. to ratify the Environmental Protocol, Congress must approve implementing legislation governing American activities in Antarctica. We have called today's hearing to examine the Clinton Administration's views on the appropriate implementing legislation, as well as the views of the private sector.

The State Department has forwarded draft implementing legislation to Congress. The Clinton proposal is a very good beginning, and I look forward to working with the Administration over the next few months to fine-tune the proposal.

Some of today's witnesses have raised concerns about the Administration's Antarctica proposal. They argue that the proposal does not apply NEPA to Antarctica activities carried out by the U.S. jointly with other nations. The proposal would also allow for untreated solid waste to be discharged directly into Antarctic waters, and would allow for incineration of waste in Antarctica. I am confident that we can resolve these important issues with the Administration before Congress begins consideration of this legislation next February.

Although Antarctica is far from our shores, the continent is of critical importance to our country. Important scientific research on the history of the earth and the working of the global environment is carried out in Antarctica. This scientific research is dependent upon the pristine nature of the Antarctic environment. The U.S. must clean up its act in Antarctica, not only to allow for the continuation of useful scientific research, but also to preserve Antarctica's wilderness for future generations.

I thank today's witnesses for coming, and I look forward to their testimony.

TESTIMONY OF

AMBASSADOR DAVID A. COLSON

DEPUTY ASSISTANT SECRETARY OF STATE
FOR OCEANS AND FISHERIES

DEPARTMENT OF STATE

BEFORE THE SUBCOMMITTEE
ON ECONOMIC POLICY, TRADE AND ENVIRONMENT
OF THE COMMITTEE ON FOREIGN AFFAIRS AND
THE COMMITTEE ON MERCHANT MARINE AND FISHERIES

UNITED STATES HOUSE OF REPRESENTATIVES

16 NOVEMBER 1993

Mr. Chairman:

I am pleased to appear before the joint hearing of the Committees on Foreign Affairs and Merchant Marine and Fisheries to discuss legislation to implement the Protocol on Environmental Protection to the Antarctic Treaty. We appreciate your initiative in arranging this hearing and, in particular, your flexibility as to its timing.

Let me begin with a few words about the Protocol itself. The Antarctic Treaty Consultative Parties adopted and opened for signature the Protocol on Environmental Protection to the Antarctic Treaty, including four annexes, on October 4, 1991, in Madrid.

All 26 Consultative Parties, including the United States, have signed the Protocol. The Consultative Parties adopted an additional annex to the Protocol at

Bonn on October 17, 1991. The Senate gave its advice and consent to ratification of the Protocol, including the annexes, on October 7, 1992.

The Protocol builds upon the Antarctic Treaty to extend and improve the Treaty's effectiveness as a mechanism for ensuring the protection of the Antarctic environment. The Protocol is intended to replace existing recommendations under the Treaty addressing the protection of the Antarctic environment, including the Agreed Measures for the Conservation of Antarctic Fauna and Flora. It does not affect other agreements on the Antarctic to which the United States is a party, such as the Convention on the Conservation of Antarctic Marine Living Resources and the Convention on the Conservation of Antarctic Seals.

The Protocol designates Antarctica as a natural reserve, devoted to peace and science. It prohibits mineral resource activities, other than scientific research, in Antarctica. Its annexes, which form an integral part of the Protocol, set out specific rules on environmental impact assessment, conservation of Antarctic fauna and flora, waste disposal and management, the

prevention of marine pollution, and area protection and management. The Protocol establishes a Committee for Environmental Protection to provide advice and recommendations to the Antarctic Treaty Consultative Meetings on the implementation of the Protocol, and includes provisions on settlement of disputes.

As noted earlier, the United States signed the Protocol upon its adoption two years ago, in October, 1991. The Senate gave its advice and consent to the ratification of the Protocol a year ago, in October, 1992. Enactment of implementing legislation is the remaining step required for the United States to deposit its instrument of ratification and, thereby, become a Party to the Protocol. (To date, six other signatory nations have become Parties - Spain, Ecuador, Peru, France, Norway and Argentina.)

Early entry into force and implementation of the Protocol constitutes the highest priority of our Antarctic policy. For this reason, we in the Administration have been working to develop agreed comprehensive legislation to implement the Protocol.

We have prepared a draft bill, entitled the Antarctic Environmental Protection Act of 1993, which would repeal the Antarctic Conservation Act of 1978 and replace it with legislation which enacts measures to implement the provisions of the Protocol and annexes. It would also repeal the Antarctic Protection Act of 1990 and create a new prohibition on mineral resource activities in Antarctica consistent with the Protocol.

Work has just been completed on the draft bill, and it has been formally transmitted to both the Speaker of the House and the President of the Senate. Attached to this testimony is a copy of the draft Administration bill, as well as copies of the letters of transmittal.

We regret the delay in forwarding comprehensive implementing legislation and wish to facilitate rapid Congressional consideration. At the same time, we believed it important to reach consensus on all components of the bill. Issues of judicial review and citizen suits (Section 14 of the draft bill) required detailed and time-consuming consideration among the interested Agencies. Having now found agreement on those issues, the draft Administration bill, as transmitted, reflects the full agreement of all agencies.

As noted, the text of the draft Administration legislation is also attached to this testimony and let me turn to its salient features.

Findings, Purpose and Policy:

The legislation would find, in conformity with Article 2 of the Protocol, that Antarctica is a natural reserve, devoted to peace and science.

The purpose of the bill is to provide legislative authority to implement the Protocol.

The legislation would incorporate the environmental principles of Article 3 of the Protocol as a statement of U.S. national policy.

Prohibited Acts:

Section 4(a) of the bill lists prohibited actions; section 4(b) lists actions that would be prohibited unless carried out with a permit.

Section 4(a)(1) would make it unlawful for any person to engage in, provide assistance to, or knowingly finance any Antarctic mineral resource activity. This provision reflects Article 7 of the Protocol, which states: "Any activity relating to mineral resources, other than scientific research, shall be prohibited." This legislation would repeal the Antarctic Protection Act, which was intended as an interim measure pending entry into force of an international agreement providing an indefinite ban on Antarctic mineral resource activities. Article 7, which has no termination date and is not reviewable for fifty years following entry into force of the Protocol, constitutes such an indefinite ban.

The legislation would prohibit several activities concerning waste in Antarctica. It would be unlawful to: introduce certain specified products; to dispose of certain types of waste, except through removal; to engage in open burning of waste after March 1, 1994; and to dispose of any waste onto ice-free land areas or into fresh water systems. In addition, section 4(b) of the legislation would prohibit disposal of any waste in Antarctica without a permit, except as otherwise

authorized under the Act to Prevent Pollution from Ships. All of these prohibitions are based on provisions of Annex III of the Protocol.

Section 4(b) of the legislation would prohibit any person from introducing into Antarctica any member of a non-native species and from engaging in any taking or harmful interference in Antarctica without a permit, in conformity with Annex II of the Protocol.

Section 4(b) would also prohibit entering specially protected areas without a permit, in conformity with Annex V of the Protocol.

These prohibitions would apply to any natural or corporate person subject to the jurisdiction of the United States, including federal, state and local government entities. The legislation would not change or affect the provisions of the Foreign Sovereign Immunities Act of 1976.

Regulations:

The legislation would authorize the NSF Director, the Secretary of Commerce, the EPA Administrator, the

Secretary of State, and the Secretary of the Department in which the Coast Guard operates to promulgate regulations to implement the provisions of the Protocol. In particular, the legislation would provide for:

-- the NSF Director to promulgate regulations on protection of flora and fauna, and of specially protected areas, in accordance with specific requirements drawn from Annexes II and V of the Protocol;

-- the NSF Director, with the concurrence of the EPA Administrator, to promulgate regulations on waste disposal and management, in accordance with specific requirements drawn from Annex III of the Protocol;

-- the Secretary of Commerce to promulgate regulations on Antarctic mineral resource activity;

-- the Secretary of State to promulgate regulations on the filing of advance notice of expeditions to and within Antarctica; and

-- the Secretary of the Department in which the Coast Guard is operating to promulgate regulations on marine pollution, including contingency planning and response action.

The legislation would also provide authority to promulgate additional regulations to implement the Protocol, including regulations to address a situation not covered by the annexes to the Protocol or in which a more rigorous or supplemental requirement is necessary.

Permits:

The legislation would set out terms and conditions on the issuance of permits by the NSF Director for activities otherwise prohibited under section 4(b). The legislation would require the Director to consult with the EPA Administrator before issuing a permit to dispose of waste, and to receive the concurrence of the Secretary of Commerce before issuing a permit for a taking or harmful interference in connection with the construction or operation of scientific support facilities.

The bill provides that the Director may modify, suspend or revoke any permit where there is a change in conditions that makes the permit inconsistent with the provisions of the legislation or the Protocol.

Environmental Impact Assessment:

The legislation would implement the provisions of the Protocol on environmental impact assessment of federal agency activities in Antarctica by applying the National Environmental Policy Act of 1969 to the activities, as specified in the legislation. The legislation leaves to regulation, and does not prejudge, the way in which activities conducted jointly by the United States and other Parties to the Protocol in Antarctica will be subject to environmental impact assessment. In this manner, the unique considerations applicable to such activities in Antarctica may best be taken into account.

The Protocol requires environmental impact assessment of non-governmental activities, as well as governmental activities, in Antarctica. The legislation would authorize the EPA Administrator to promulgate regulations to provide for the environmental impact assessment of

non-governmental activities, including tourism, consistent with the provisions of Article 8 of Annex I to the Protocol.

Monitoring:

The legislation would authorize the NSF Director, in consultation with the EPA Administrator, to promulgate regulations to provide for procedures to assess and verify the environmental impact of activities that proceed following a determination that they will have more than a minor or transitory impact on the Antarctic environment or dependent and associated ecosystems.

Marine Pollution:

The legislation would amend the Act to Prevent Pollution from Ships, to implement the Protocol's provisions on marine pollution contained in Annex IV.

Representation:

The legislation would provide that the Secretary of State, with the concurrence of appropriate agency officials, would appoint the U.S. representative to the

Committee for Environmental Protection created under the Protocol.

Oversight:

The legislation would provide that the Secretary of State, in conjunction with the EPA Administrator and the Secretary of Commerce, will inspect the U.S. Antarctic Program at appropriate intervals of between two and five years. The inspection team will conduct on-site inspections of stations, field camps, and operations, and review any other relevant information, with a view to examining the overall compliance of the U.S. Antarctic Program with the legislation and the Protocol.

The inspection team will prepare a report which documents its findings, specifies any examples of failures of compliance, and makes recommendations. The report, along with any comments by the NSF Director on it, will be made public.

Study of Antarctic Tourism:

The legislation would provide that the Department of State will coordinate an interagency study to determine

whether additional measures should be taken with respect to tourism in Antarctica. The legislation would provide that the study would be completed within 24 months of the date of enactment of the legislation.

Rule Making and Petition.

The legislation would provide that any person may petition for the promulgation, amendment, or repeal of any regulation. Within 180 days of receipt of the petition, the agency responsible for implementing the legislation shall grant or deny the petition.

Judicial Review and Citizens' Suits.

The legislation would provide for judicial review of final regulations, the denial of petitions for the promulgation, amendment or repeal of any regulation or final agency action on any permit. It would also provide for citizens' suits to help to ensure effective implementation of the provisions of the Act. The citizen suit provision would exempt the activities of individual scientists from such suits, but provide that petitions could be made to the relevant Federal agency to take enforcement action against such individuals.

Mr. Chairman, in conclusion, the draft Administration legislation which is now before you seeks to build upon and synthesize ideas that are contained in H.R. 1066, as well as other draft bills that have been introduced in the House and Senate. We believe that the Administration's proposal represents a balanced and innovative basis for United States implementation of the Protocol. The consensus achieved by the agencies certainly represents the product of long and concerted effort. We look forward to working with you and your colleagues on the Senate side to enact implementing legislation which will set the standard for all Parties to this important new treaty.

TESTIMONY OF

DR. CORNELIUS SULLIVAN

DIRECTOR, OFFICE OF POLAR PROGRAMS

NATIONAL SCIENCE FOUNDATION

BEFORE THE HOUSE COMMITTEE ON FOREIGN AFFAIRS

AND THE HOUSE COMMITTEE ON

MERCHANT MARINE AND FISHERIES

November 16, 1993

Thank you, Mr. Chairman, for this opportunity to discuss implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty. We appreciate your interest in Antarctica and your leadership on legislation to implement the Protocol.

The Protocol, signed by the United States at Madrid on October 4, 1991, and given the advice and consent of the Senate on October 7, 1992, designates Antarctica as a natural reserve, devoted to peace and science, and establishes a comprehensive environmental protection regime governing activities undertaken there. The National Science Foundation (NSF) whole-heartedly supports its basic goal of requiring that activities be undertaken in a manner that preserves the Antarctic environment, while according priority to scientific research.

Antarctic Science

Antarctic science continues to make invaluable contributions to our understanding of the Earth, the evolution of the universe, and global ecological and environmental processes. For example --

- In October of 1993, Antarctic researchers observed the lowest ozone levels and the largest ozone "hole" ever. Antarctic researchers in this area are focusing their efforts on ground-based stratospheric chemistry to supplement satellite observations; measurements of increases in ultraviolet radiation coming through the ozone hole; and experiments aimed at understanding the effects of increased UV on antarctic life.

- A four-station Antarctic UV monitoring system is providing a continent-wide perspective on the scope of increased levels of ultraviolet radiation associated with the antarctic ozone hole. Recent results suggest that the ozone hole reduced annual biotic productivity in the antarctic marginal sea ice zone by 7 million metric tons.

- South Pole measurements of microwave background radiation are helping astrophysicists understand the

evolution of the universe. Because of extremely clear atmospheric conditions at the South Pole, the quality of data collected there is unsurpassed.

- Bird fossils found on a small island near the antarctic Peninsula are helping us understand how birds were evolving 65 to 70 million years ago. Because there are no other land bird fossils of that age in Antarctica, the discovery also raises questions about why this bird species survived massive, worldwide extinctions at the end of the Cretaceous period.

- An active volcano discovered beneath the west antarctic ice sheet may shed light on how Antarctica's ice contributes to rising sea levels. Investigators who discovered the volcano believe heat from subglacial volcanoes strongly shape the character of today's ice by melting it from beneath and setting the ice aflow in rapid streams.

Antarctica offers unique opportunities for scientific research, in large part because the environment is relatively unaffected by human activity there. The Administration is committed to protecting this unique natural laboratory.

For the past several months, an interagency group, including

the Department of State, the Environmental Protection Agency (EPA), the National Oceanic and Atmospheric Administration (NOAA), the Department of Defense, the Coast Guard, the Department of the Interior, and NSF, has worked to develop legislation that will implement the Protocol's environmental protection measures.

The Administration Bill

The Administration believes that its bill best achieves the objectives of the Protocol by providing for comprehensive environmental protection in a way that does not unnecessarily impede scientific research. The bill takes advantage of expertise lodged in various Federal agencies without creating a cumbersome regulatory bureaucracy, and it does not unreasonably limit the flexibility of regulating agencies. Its basic components are as follows:

- Regulatory Responsibilities. The Coast Guard would issue regulations governing marine pollution; NOAA, Antarctic mineral resource activities; EPA, environmental assessment of nongovernmental activities; and NSF, conservation of flora and fauna, protected areas, and waste disposal and waste management. EPA's concurrence would be required for waste disposal and waste management regulations, and NOAA's concurrence would be required for permits authorizing the taking of

flora and fauna incidental to the operation or construction of U.S. facilities.

- Specific Provisions. In addition to the Protocol's specific requirements, implementing legislation would require the development of regulations governing incineration and sewage discharges in Antarctica, and would require that the environmental principles set forth in Article 3 of the Protocol be taken fully into account in doing so. Incineration regulations would be promulgated only in the event NSF, in consultation with EPA, and based on sound waste management planning, determines to use incineration as a means of waste disposal.

- Oversight of U.S. Activities in Antarctica. An inspection/review team designated by the Secretary of State, the Administrator of EPA, and the Secretary of Commerce, would periodically inspect U.S. facilities in Antarctica, review USAP environmental practices for compliance with the implementing legislation and the Protocol, and make recommendations to the program.

- Tourism. Tour operators doing business in the United States would have to ensure that their expedition members are informed of statutory obligations, and that

non-U.S. vessels chartered by those operators would comply with the marine pollution provisions of the Protocol. In addition, tourists would have to comply with all requirements relating to waste disposal and waste management, conservation of fauna and flora and protected area management. Finally, an interagency group would conduct a study of the tourism issue to determine whether additional measures to limit Antarctic tourist activities are appropriate.

- Judicial Review/Citizen Suits. The legislation provides for judicial review of final regulations and final agency action on permits. It also provides for citizen suits. The legislation's citizen suit provision exempts the activities of individual scientists and universities from citizen suits, but provides that petitions could be made to the relevant federal agency to take enforcement action.

Environmental Protection Measures

Even in advance of the passage of implementing legislation, NSF has taken a series of environmental protection measures. Our more recent accomplishments include:

- Dramatic increases in waste retrograde efforts. The

1991-1992 retrograde effort consisted of 2,759 tons of waste material, equipment and recyclables. The size of the retrograde was the result, in part, of the major cleanup of the Fortress Rocks area and the return of approximately 1,500 55-gallon drums of contaminated fuel, organic solvents, and acids and bases that had accumulated over the years;

- Development and implementation of oil spill prevention and spill management plans; replacement of many rubber fuel bladders with steel tanks and old, short-length fuel hoses with new, long-length "dry break connections; and ongoing installation of secondary containment systems for fuel storage tanks;

- Commencement of routine monitoring of ambient air and water quality at McMurdo Station so as to gather baseline information and detect unforeseen impacts of U.S. Antarctic Program (USAP) activities; and

- Cessation of open burning of waste at all USAP stations, and preparation of an environmental evaluation of a plan to remove virtually all USAP solid waste from our stations in Antarctica.

.. addition to these activities, and those listed on the

attachment to this testimony, we have instituted a shipboard observer program to monitor compliance with applicable environmental statutes and regulations onboard tourist vessels; issued final waste management and waste disposal regulations that, among other things, require U.S. citizens to comply with the Protocol's waste management and waste disposal requirements; and have hired additional staff to help enforce applicable environmental statutes and regulations.

As you can see, the Foundation is committed to protecting the Antarctic environment. A clean environment ensures that all scientists will continue to learn more about our earth system science from the unique perspective of the Antarctic as a natural laboratory. We share your goal of implementing the Protocol as quickly as possible, and look forward to working with you to enact the legislation proposed by the Administration.

ATTACHMENT TO TESTIMONY

ENVIRONMENTAL ACCOMPLISHMENTS

- NSF has coupled clean up efforts, particularly at McMurdo Station, with ongoing systems analysis and development of a waste management plan that, among other objectives, establishes an inventory of USAP inputs to and outputs from Antarctica. USAP's refinement of its waste management program will help minimize the environmental impacts associated with USAP operations.

- During the 1991-1992 season, NSF completed the removal of all ground surface debris at McMurdo Station's Fortress Rocks area, and the subsequent evaluation of the cleanup's effectiveness now allows re-use of that area for staging recyclable materials and waste products that are to be removed from Antarctica.

- NSF has made major strides in inventory management to reduce the amount of hazardous materials in Antarctica.

- As part of a program to clean up former U.S. Antarctic bases, a joint USAP/National Park Service effort was conducted at East Base in the Antarctic Peninsula. The former station was cleaned up and established as a protected historic site under the Antarctic Treaty.

- Old Palmer Station, near the present Palmer Station, has been removed and the site cleared of structures and debris. Progress is being made to complete an on-going clean up at Hallett Station 400 miles north of McMurdo.

- The Antarctic Program has completed over 100 environmental assessments of USAP proposed actions and activities between 1988 and early 1993. These assessments are available to the public on NSF's electronic dissemination system.

- NSF issued procedures for environmental assessment of proposed Antarctic activities consistent with the requirements of the Protocol on Environmental Protection to the Antarctic Treaty.

- NSF has made major strides in returning waste products from inland stations to McMurdo Station for processing and disposal. Over 300,000 pounds of waste were returned from South Pole Station during the 1992-1993 season.

- The USAP, in an effort to move towards its long-term goal of total waste removal, has dramatically increased efforts in the area of waste retrograde. The 1991-1992 retrograde effort was the largest in USAP history, consisting of 2,759 tons of waste material, equipment and recyclables. The size of the retrograde was a result, in part, of the major cleanup of the Fortress Rocks area and the return of approximately 1,500 55-gallon drums of contaminated fuel, organic solvents, and acids and bases that had accumulated over the years.

- NSF has removed dozens of electrical transformers suspected of containing PCBs from Antarctica.

- NSF is using waste heat from power generation to help heat stations.

STATEMENT

OF

BRUCE S. MANHEIM, JR.
SENIOR ATTORNEY
ENVIRONMENTAL DEFENSE FUND

BEFORE THE

SUBCOMMITTEE ON ECONOMIC POLICY, TRADE AND ENVIRONMENT

OF THE

HOUSE COMMITTEE ON FOREIGN AFFAIRS

AND THE

HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

ON

IMPLEMENTING LEGISLATION

FOR THE

PROTOCOL ON ENVIRONMENTAL PROTECTION TO THE ANTARCTIC TREATY

NOVEMBER 16, 1993

Messrs. Chairmen and Members of the Committees:

Thank you for the opportunity to testify today on implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty. At the outset, I would like to express my appreciation to the Committees for their considerable oversight of Antarctic environmental issues during the recent past. With passage of the Antarctic Protection Act of 1990 and oversight hearings thereafter, there is no doubt that Congress substantially strengthened the position of the United States at the international meetings that ultimately led to adoption of the Protocol on Environmental Protection to the Antarctic Treaty. As Congress now turns to legislation that applies this new accord to U.S. citizens and government agencies, it will need to address a number of key issues. My testimony begins by briefly describing the background surrounding adoption of the Protocol and some of the environmental problems that plague Antarctica. This statement then focuses on the rather troubling issues raised by the administration's proposal to implement the Protocol, and it offers recommendations to address such problems.

I. INTRODUCTION

The Protocol on Environmental Protection to the Antarctic Treaty grew out of a recognition by a number of nations that the existing set of agreements and recommendations governing Antarctica did not afford the continent comprehensive environmental protection. To establish a scheme for such protection, the parties to the Antarctic Treaty set forth in the Protocol legally binding principles applicable to all activities in Antarctica and they prohibited all activities relating to mineral resources, except for scientific research. In addition, the Protocol prescribes detailed rules through a system of annexes on environmental impact assessment (Annex I), conservation of Antarctic fauna and flora (Annex II), waste disposal and waste management (Annex III), prevention of marine pollution (Annex IV), and area protection and management (Annex V). Last year, the Senate gave its advice and consent to ratification of the Protocol. However, the Bush Administration decided not to deposit the instrument of ratification and thereby complete the ratification process until implementing legislation is enacted.

During the last Congressional session, implementing legislation for the Protocol proved to be rather controversial because of assertions that it would somehow adversely affect scientific research activities in Antarctica. Unfortunately, those making such claims overlooked the fact that many of the provisions in the Protocol were developed directly from recommendations and reports of the scientific body that advises the Antarctic Treaty parties -- the Scientific Committee on Antarctic Research. For example, Annex I of the Protocol sets out environmental impact assessment procedures that are based on

recommendations contained in a report by the Scientific Committee on Antarctic Research ("SCAR") detailing guidelines for evaluating impacts from scientific and logistic activities.[1] Similarly, Annex II's measures on conservation of fauna and flora and Annex V's provisions on protected areas are derived from the "Agreed Measures for Conservation of Antarctic Fauna and Flora," which in turn were based on SCAR recommendations. Moreover, Annex III's provisions governing waste disposal come from SCAR's 1988 report on waste management in Antarctica, which contained a number of recommendations for control of waste in Antarctica.

As SCAR's recommendations and reports make clear, there should be no tension between effective safeguards ensuring protection of the Antarctic environment and scientific research. Indeed, it is clear that protection of the Antarctic environment will ultimately enhance its use as a natural laboratory by scientists. In the past, pollution of the Antarctic environment has interfered with important scientific research taking place there. For example, a close correlation has been found between the presence of contaminants underlying the waters near McMurdo Station and the destruction of scientifically important marine life.[2] Moreover, as the National Science Foundation ("NSF") itself recently reported, uncovered garbage left at its landfill operation at that base "has disrupted the natural predator-prey relationship, making any studies of bird community interactions in their natural states questionable in the vicinity of the station."[3] At the same time, tourist expeditions in Antarctica have interfered with scientific investigations. The Bahia Paraiso oil spill near Palmer Station seriously disrupted studies to determine the ecological effects of ozone depletion and commercial krill harvesting in Antarctica.

At the same time, it has also become increasingly clear that certain operations at U.S. facilities in Antarctica may pose a risk to the personnel that work there. For example, through the 1980s, NSF discarded wastes at McMurdo Station by bull-dozing them into an open refuse pit, dousing them with waste fuel, and igniting them with a flare pistol even though it was well known that

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[1] "Man's Impact on the Antarctic Environment," Scientific Committee on Antarctic Research, 1985.

[2] See R.W. Risebrough, PCB and PCT Contamination in Winter Quarters Bay, Antarctica, 21 Marine Pollution Bulletin 523 (1990); Lenihan, Oliver & Oakden, Intense and Localized Benthic Marine Pollution Around McMurdo Station, Antarctica, 21 Marine Pollution Bulletin 422 (1990)

[3] See Final Supplemental Environmental Impact Statement for the United States Antarctic Program, 5-28 (October 1991).

emissions from such open burns (which, at least, in part appear to have fallen out over the station) contain PCB's.[4] And, as NSF subsequently reported, such burn sites contained asbestos, as well. More recently, NSF disclosed (in response to a Freedom of Information Act request from EDF) that emission levels of dioxins from the incinerator it had decided to utilize to burn certain wastes (in lieu of open pit burns) were substantially higher than the EPA standard for very large municipal waste incinerators operating in the United States. The extent to which these dioxins fell out over McMurdo Station remains unclear, but it must be troubling for those who work at the base. In still other published reports, research groups have demonstrated that untreated sanitary wastes discharged directly into the waters off of McMurdo Station may be reaching the water intake for the base.[5]

II. ISSUES SURROUNDING IMPLEMENTATION OF THE PROTOCOL

Despite these well-established problems, representatives from NSF and other agencies last year still opposed a number of provisions in H.R. 5459 (the bill introduced by Chairman Studds during the 102d Congress). In an effort to resolve those issues that impeded adoption of implementing legislation for the Protocol last year, EDF and other non-governmental organizations (Greenpeace and the Keystone Center) hosted a series of meetings with administration officials beginning in January 1993. Yet, after almost six months of talks, we reached an impasse on a number of important issues and, regrettably, those differences are now highlighted by the administration's proposal for implementing legislation. Indeed, as set out in much more detail below, the administration proposal:

> (A) seeks to overrule a recent federal appeals court decision by carving out a gaping loophole allowing agencies to avoid compliance with the National Environmental Policy Act (pgs. 4-7);
>
> (B) does not create a mechanism allowing the public to comment on, or compel the federal government to review, environmental evaluations prepared by foreign operators (pgs. 7-8);
>
> (C) would weaken the Antarctic Conservation Act and other federal statutes

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[4] Risebrough et al., Transfer of Chlorinated Biphenyls to Antarctica, 264 Nature 738 (1976).

[5] See Howington, J.P., McGeters, G.A., Barry, J.P., and Smith, J.J. (1992). Distribution of the McMurdo Station Sewage Plume. Mar. Poll. Bull. 25: 324-327; and Venkatesan, M.I. and Mirsadeghi, F.H. (1992). Coprostanol as Sewage Tracer in McMurdo Sound, Antarctica. Mar. Poll. Bull. 25: 328-332.

protecting Antarctic wildlife by allowing incidental taking (pgs. 8-10);

(D) eliminates that Act's mandate to create a comprehensive program governing all sources of pollution in Antarctica (pgs. 11-12);

(E) would permit incineration to proceed in Antarctica and not allow the Environmental Protection Agency to veto that decision (pgs. 12-14);

(F) authorizes discharges of untreated sewage into Antarctic waters pursuant to standards weaker than those in the Clean Water Act (pgs. 14-16);

(G) fails to prohibit the use of landfills and leaded gasoline in Antarctica, even though both practices were previously banned by the Antarctic Treaty parties (pgs. 16-17);

(H) fails to prohibit government vessels from discharging wastes, including plastics and garbage, overboard in Antarctica in contravention of the Act to Prevent Pollution from Ships (pg. 17);

(I) narrowly construes and improperly implements legally binding requirements in Article 3 of the Protocol (pgs. 18-19);

(J) indefinitely defers any significant action to control a burgeoning tourist industry in Antarctica (pgs. 19-22);

(K) does not apply any of the Protocol's provisions to U.S. fishing expeditions in Antarctica (pgs. 22-23)

(L) fails to include a citizen suit provision (unlike 16 other environmental laws) and does not authorize other federal agencies to bring enforcement actions against other agencies that violate the Act's provisions (pgs. 23-25);

(M) does not close a loophole in the Protocol's prohibition on mining in Antarctica by defining what constitutes "scientific research" (pgs. 25-26); and

(N) seeks to create additional exceptions to existing law and limit the role that agencies other than NSF can play in implementing the Protocol (pgs. 26-27).

A. Compliance with the National Environmental Policy Act

The National Environmental Policy Act ("NEPA") requires all federal

agencies to prepare an environmental impact statement ("EIS") in connection with any proposal for a major action "significantly affecting the quality of the human environment." 42 U.S.C. § 4332(2)(C). Following passage of the Act in 1970, NSF promulgated regulations applying this requirement to its decisions about actions in Antarctica. See 39 Fed. Reg. 3544, 3547 (Jan. 28, 1974) (EIS "requires assessment of the proposed action as it affects both the national and international environment.") (codified at 45 C.F.R. § 640.3(e) (1977)). However, following issuance of Executive Order 12114 in 1979, it refused to comply with NEPA for its actions in Antarctica until it was forced to do so by a federal appeals court ruling earlier this year. Specifically, in Environmental Defense Fund v. Massey, 986 F.2d 528 (D.C. Cir. 1993), Chief Judge Mikva, writing for a unanimous panel of the U.S. Court of Appeals for the D.C. Circuit, concluded that NEPA governs NSF's decision to build and operate two incinerators in Antarctica. As the Court noted, if such actions were not subject to NEPA, then NSF's environmental decision-making would not be subject to public scrutiny and judicial review. As a practical matter, the absence of such oversight has resulted in NSF preparing fewer assessments and causing more environmental harm to the Antarctic environment.

Now, the administration proposal seeks to carve out a gaping loophole that will allow agencies such as NSF to avoid compliance with NEPA. Under Section 7(b) of its bill, the administration proposes to exempt from NEPA any "Antarctic joint activity" where the Secretary of State, in cooperation with the lead U.S. agency planning such activity, determines that another Protocol party is "coordinating implementation of environmental impact assessment procedures for that activity." The administration proposal broadly defines the term "Antarctic joint activity" to mean "any federal activity in Antarctica which is proposed to be conducted, or which is conducted, jointly or in cooperation with one or more foreign governments, as defined in regulations promulgated by such agencies as the President may designate." Moreover, the proposal provides that determinations by the Secretary of State, "and agency actions and decisions in connection with assessments of impacts of Antarctic joint activities, shall not be subject to judicial review." If these provisions become law, the relevant agency (i.e., NSF) will no doubt seek to persuade another government to take the lead on "joint projects" and thereby avoid compliance with NEPA. This will be particularly problematic since arguably any number of activities undertaken in Antarctica are done so either jointly or in cooperation with other governments, and no one will have the right to go to court to question the federal agency's compliance with NEPA or even the Protocol's assessment provisions.

This sweeping exception from NEPA flies in the face of NSF's implementation of NEPA through the 1970's when it undertook a number of joint research projects with other countries and it prepared EISs under NEPA for at least two such efforts. See 38 Fed. Reg. 23488 (Aug. 30, 1973), 39 Fed. Reg.

5508 (Feb. 13, 1974) (Dry Valley Drilling Project); and 39 Fed. Reg. 39934 (Nov. 12, 1974) (Ross Ice Shelf Project). The State Department also prepared EISs under NEPA for two international agreements governing Antarctica. See 39 Fed. Reg. 30169 (Aug. 21, 1974) (Antarctic Seals Convention); 43 Fed. Reg. 4475 (Feb. 2, 1978) (Antarctic Marine Living Resources Convention). Indeed, the administration proposal is nothing short of an attempt to overrule the Massey decision. There, NSF argued that its incineration of wastes at McMurdo Station was undertaken in cooperation with other nations and that application of NEPA to its Antarctic activities would jeopardize joint projects. Moreover, NSF asserted that the Protocol's environmental assessment procedures somehow conflicted with, and would prevent compliance with, NEPA. Yet, as set out below in language from the Massey decision, both of these arguments were flatly rejected by the Appeals Court:

> Although NSF concedes that NEPA only seeks to regulate the decisionmaking process of federal agencies, and that this case does not present a conflict between U.S. and foreign sovereign law, NSF still contends that the presumption against extra-territoriality controls this case. In particular, NSF argues that the EIS requirement will interfere with U.S. efforts to work cooperatively with other nations toward solutions to environmental problems in Antarctica. In NSF's view, joint research and cooperative environmental assessment would be "placed at risk of NEPA injunctions, making the U.S. a doubtful partner for future international cooperation in Antarctica."
>
> NSF also argues that the Protocol on Environmental Protection to the Antarctic Treaty, which was adopted and opened for signature on October 4, 1991, would, if adopted by all the proposed signatories, conflict with the procedural requirements adopted by Congress for the decisionmaking of federal agencies under NEPA. According to NSF, since NEPA requires the preparation of an EIS for actions with potentially "significant" impacts, while the Protocol requires an environmental analysis even for actions with "minor or transitory" impacts on the Antarctic environment, the two regulatory schemes are incompatible and will result in international discord.
>
> We find these arguments unpersuasive. . . We are unable to comprehend the difficulty presented by the two standards of review. It is clear that NSF will have to perform *fewer* studies under NEPA than under the Protocol, and where an EIS is required under NEPA, it would not strain a researcher's intellect to indicate in a single document how the environmental impact of the proposed action is more than "minor" and also more than "significant."

> More importantly, we are not convinced that NSF's ability to cooperate with other nations in Antarctica in accordance with U.S. foreign policy will be hampered by NEPA injunctions. . . Since NEPA imposes no substantive requirements, U.S. foreign policy interests in Antarctica will rarely be threatened, except perhaps where the time required to prepare an EIS would itself threaten international cooperation. . . . or where the foreign policy interests at stake are particularly unique and delicate. Thus, contrary to NSF's assertions, where U.S. foreign policy interests outweigh the benefits of the EIS requirement, NSF's efforts to cooperate with foreign governments regarding environmental practices in Antarctica will not be frustrated by forced compliance with NEPA.
>
> Applying the presumption against extraterritoriality here [thereby precluding application of NEPA] would result in a federal agency being allowed to undertake actions significantly affecting the human environment in Antarctica, an area over which the United States has substantial interest and authority, without ever being held accountable for its failure to comply with the decisionmaking procedures instituted by Congress-- even though such accountability, if it was enforced, would result in no conflict with foreign law or threat to foreign policy.

Clearly, like the Court of Appeals, the Committees should reject the administration's effort to avoid NEPA compliance for its Antarctic activities.[6]

B. Review of Environmental Evaluations from Foreign Operators

In this context, EDF also suggests that the legislation require the relevant agencies to involve the public in decisions regarding the adequacy of environmental assessments and environmental impact statements prepared by other nations whose activities affect Antarctica. There is currently no mechanism within the United States to allow interested parties to comment on evaluations prepared by other nations nor is there any authority to require any

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[6] The Committee should also reject other provisions in the administration proposal that would undercut NEPA compliance. These provisions include limiting NEPA compliance solely to Section 102(2)(C), even though other provisions in NEPA create obligations (Section 7(a)(1)(B)); exempting NEPA compliance in connection with any permitting decision under the Act (Section 7(h)); and creating an exception for emergencies that goes well beyond that provided in the Council on Environmental Quality regulations implementing NEPA (Section 7(e).

federal agency to submit such comments. As a result, the Protocol's impact assessment process could become a paper exercise since Treaty countries are typically quite resistant to pressing each other on environmental issues. Opening the process to public input and requiring the Administration to justify its reluctance to criticize another nation's actions where they are inconsistent with the Protocol or its annexes could facilitate compliance and enforcement.

Moreover, as reflected in the following excerpt, such a provision would also protect U.S. research activities in Antarctica:

> "[T]he environmental constraints imposed in the Antarctic are proving inadequate to protect the science we are conducting at the Arrival Heights Site of Special Scientific Interest (SSSI). . . The last austral summer, without consulting with the U.S. scientists operating at Arrival Heights, the Telcom Corporation of New Zealand installed a satellite earth station (SES) on First Crater, which delimits the southern boundary of the Arrival Heights SSSI. Because the SES uses a radio transmitter that is located within the SSSI and which broadcasts directly over the site, both the construction and the broadcasts appear to be in clear violation of the Antarctic Treaty. It is our understanding that representatives from Telecom have argued to both U.S. and New Zealand government officials that the transmission frequencies used by the SES are too high to affect our measurements. Unfortunately, if we had been approached, as the Treaty appears to require, we could have explained that our sensitive radio measurements are likely to be affected by the SES transmissions."[7]

Hence, the legislation should establish procedures for public notice and comment through the Federal Register of environmental evaluations prepared by other nations. Such a provision would require the Secretary of State, based on public comment, to formulate a position as to whether a foreign party's activity is consistent with the Protocol, including the principles contained within Article 3.

C. Taking Under the Antarctic Conservation Act

Under the Antarctic Conservation Act ("ACA"), NSF may only issue permits authorizing the taking of native mammals or birds for "the purpose of providing specimens for scientific study or scientific information, or specimens for museums, zoological gardens, or other educational or cultural institutions or uses." 16 U.S.C. § 2404(e)(2)(A)(i). However, because of the Bush Administration's insistence during the Protocol negotiations, Article 3(2)(c) of

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[7] See Letter to the Editor from Drs. A.C. Fraser-Smith, R.A. Helliwell, L.J. Lanzerotti, and T.J. Rosenberg, Science 256: 9500 (May 15, 1992).

Annex II of the Protocol authorizes parties to issue permits for "taking" and "harmful interference" of Antarctic wildlife "to provide for the unavoidable consequences of scientific activities not otherwise authorized . . . , or of the construction and operation of scientific support facilities." Hence, while the Protocol was meant to strengthen environmental protection in Antarctica, it contains a potentially sweeping loophole that would permit federal agencies such as NSF and the Coast Guard to engage in activities resulting in takings that are currently unlawful under the ACA and other federal statutes such as the Marine Mammal Protection Act and the Migratory Bird Treaty Act.

Unfortunately, the administration now proposes to incorporate this loophole into U.S. law by authorizing NSF, with the concurrence of the National Oceanic and Atmospheric Administration ("NOAA"), to permit taking or harmful interference "for consequences of scientific activities, or of the construction and operation of scientific support facilities, which the Director has determined are unavoidable."[8] (See Section 5(g)(3)(A)(iii)). In support of this provision, administration officials contend that incidental taking was never prohibited under the ACA. That assertion, however, conflicts directly with the Act's plain language and its legislative history. Indeed, as introduced, Section 6 of the bill that ultimately became the ACA provided that the Director of NSF could "by permit or regulation authorize such activities as he finds are necessary for the establishment, supply, and operation of stations in Antarctica."[9] However, following markup by the House Merchant Marine and Fisheries Committee, that exception was deleted. Hence, it can be presumed that Congress did not intend to permit takings of Antarctic wildlife incidental to the construction and operation of bases or to the conduct of research actions in Antarctica.[10]

Indeed, until only recently, NSF itself had interpreted the ACA to prohibit

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[8] This loophole may be even more troubling that it first appears because, under the administration proposal, it would not be subject to NEPA compliance. As a result, it is unclear whether the determination by the Director that the consequences of a particular action may or may not be avoidable will be accompanied by an analysis of alternatives to the proposed action.

[9] See H.R. 7749, 95th Cong., 1st Sess. § 6 (1977) in Antarctic Fauna and Flora Conservation Act: Hearings before the Subcomm. on Fisheries and Wildlife Conservation and the Environment of the House Comm. on Merchant Marine and Fisheries, 95th Cong., 1st Sess. 255. (1977).

[10] See Russello v. United States, 464 U.S. 16, 23-24 (1983) ("Where Congress includes limiting language in an earlier version of a bill but deletes it prior to enactment, it may be presumed that the limitation was not intended.").

incidental taking (including harassment) of Antarctic wildlife in connection with research activities. In January 1988, it informed the Merchant Marine and Fisheries Committee that a scientist undertaking a survey of seals violated the Act when his helicopter flew too close to a breeding penguin colony and scattered the birds, exposing their eggs to scavenging skuas. Specifically, NSF advised the Committee that:

> The Division of Polar Programs has just completed its investigation of this incident, which involves a potential violation of the Antarctic Conservation Act. . . After reviewing all of the information related to the incident, we have concluded that the letter and intent of Section 670.4(a) of the ACA was violated. Although the disturbance was unintentional, it reflects errors of judgment by both the scientist and U.S. Coast Guard air crew involved. We have informed all involved of the importance we attach to the need for strict adherence to the ACA. See, Letter to Walter B. Jones, Chairman, House Committee on Merchant Marine and Fisheries, from Dr. Peter Wilkness, Division of Polar Programs, National Science Foundation, January 13, 1988.

Just last year, when NSF testified before the Merchant Marine and Fisheries Committee, it again indicated that this act constituted a violation of the ACA.

Beyond this shift in interpretation, administration officials now also assert that a prohibition on incidental take from development and operation of coastal stations and other research activities would make it difficult to operate its research bases in Antarctica. Yet, NSF's own October 1991 Environmental Impact Statement ("EIS") for the United States Antarctic Program ("USAP") states that wildlife will not be taken by construction and operation at its coastal facilities.[11] For example, in describing impacts to wildlife at Palmer Station, that EIS states that there is "little likelihood that significant impacts would result from construction activities at the station itself." For McMurdo Station, that document states that there are "no plans to expand activities that would directly affect known populations or habitats. Therefore, impacts to the animals from continuation of USAP activities at McMurdo Station and the McMurdo Sound area would be insignificant." Similarly, NSF reported that "activities at small coastal field camps are not expected to affect marine or terrestrial habitats unless fuel is spilled." Accordingly, for all of these reasons, this weakening amendment within the administration proposal must be rejected.

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[11] See National Science Foundation, Final Supplemental Environmental Impact Statement, October 1991. Id. at 5-48.

D. Comprehensive Pollution Controls for Antarctica

With passage of the ACA, Congress also established pollution control requirements for U.S. actions in Antarctica that go well beyond the waste disposal measures set out in the Protocol. Specifically, the Act makes it unlawful for any U.S. citizen "to discharge, or otherwise dispose of, any pollutant within Antarctica" unless authorized by permit or regulation. 16 U.S.C. § 2403(a)(1)(E). To implement that prohibition, the Act directed NSF to promulgate regulations that "designate as a pollutant any substance which the Director [of NSF] finds liable, if the substance is introduced into Antarctica, to create hazards to human health, to harm living resources or marine life, to damage amenities, or to interfere with other legitimate uses of Antarctica." 16 U.S.C. § 2405(b)(6). The Director was also ordered to "specify those actions which must, and those actions which must not, be taken in order to prevent or control the discharge or other disposal of pollutants, from any source within Antarctica." 16 U.S.C. § 2405(b)(7). On the other hand, the Protocol only governs management of certain wastes in Antarctica and is entirely silent on other significant sources of pollution subject to regulation under the ACA.[12] Hence, as a threshold matter, the legislation must retain the ACA's non-discretionary directive for identification of "pollutants" and measures to control the discharge of such pollutants from any source in Antarctica.

Clearly, the legislation should charge EPA with this responsibility. This is particularly important because NSF recently promulgated regulations under the ACA which essentially reiterate the measures set out in Annex III of the Protocol and which do not fully identify pollutants from any source in Antarctica. See 58 Fed. Reg. 34713 (June 29, 1993). Moreover, when promulgating those rules, NSF rejected certain recommendations raised by EPA because NSF was reluctant to modify its practices consistent with EPA's call for tighter measures. This problem is manifested by the following responses of NSF to EPA comments on the NSF proposal:

> EPA believes the rule should require secondary containment for tanks and container storage areas, requiring all tanks to have

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[12] Such pollution may stem from fuel spills (there have been more than 30 spills during the past decade alone at U.S. facilities); emissions from HC vapor loss from bulk petroleum storage tanks; fugitive dust generation from earthmoving and helicopter operations (causing a respiratory irritation known as "McMurdo Disease"); emissions of SO2, NO2, PM-10, HC, and CO from the McMurdo power plant and water distillation plant; emissions from vessels and their shipboard incinerators; and emissions, particularly of lead, from airplanes crossing Antarctica.

monitoring and leak detection devices (not just to the extent available), and require the preparation of contingency plans addressing potential accidental release or emergencies. The rule already requires permit applicants to submit contingency plans for controlling accidental releases. As to secondary containment and leak detection devices, it is not possible at this time for USAP to provide secondary containment or monitoring and leak detection devices for all tanks and container storage areas. NSF will consider what is appropriate as permit applications are submitted, but it has not made this suggested change to the final rule. 58 Fed. Reg. 34717, June 29, 1993.

EPA comments that § 671.12 (b) and (c) allow NSF to continue its current practice of disposing of sewage and domestic liquid wastes into the sea, and states that this practice is inconsistent with Article 2(2) of Annex III of the Protocol which states that " . . . sewage and domestic liquid wastes, shall, to the maximum extent practicable, be removed from Antarctica." NSF believes its current practice is fully consistent with the requirements of Article 2(2), since it simply not practicable to retrograde the sewage and domestic liquid waste that it generated by USAP -- over 1,100 persons occupy McMurdo Station alone during the austral summer. 58 Fed. Reg. 34717, June 29, 1993.

EPA suggests strengthening subsections (a)(2) and (3) by including requirements in both sections for monitoring compliance and for contingency plans for controlling releases. Subsection (a)(2) applies to all waste (including hazardous wastes), so it is not necessary to repeat the monitoring requirement in both subsections. With respect to contingency plans, NSF believes it unduly burdensome, and not particularly useful, to require such plans for controlling releases of non-hazardous waste, and has not included that requirement in the final rule. 58 Fed. Reg. 34715, June 29, 1993.

As with virtually all other federal environmental statutes governing pollution, the implementing legislation must charge EPA -- not NSF -- with unilateral authority to control pollution in Antarctica

E. Incineration in Antarctica

In addition to eliminating Congress' 1978 mandate for a pollution control program, the administration proposal (Section 6(e)(5)) would also permit incineration to go forward in Antarctica. That proposal is quite troubling since NSF itself has decided to terminate use of its incinerator on the continent -- the

only one operated there by a U.S. citizen or agency -- because of its environmental effects. Specifically, in connection with its preparation of an environmental assessment pursuant to NEPA, NSF announced on June 14, 1993 that incineration in Antarctica is no longer its "proposed action." NSF's new Director of its Office of Polar Programs, Dr. Neil Sullivan, stated:

> In December 1992, NSF stated that it would reevaluate its decision to incinerate after collecting and analyzing additional incinerator emissions data. Subsequently, [after the Massey decision], NSF halted incineration while it further reviewed options for disposing of food and food-contaminated wastes. Since my arrival at NSF last month, the testing and analysis of the emissions monitoring data were completed. Most tested parameters were well below acceptable levels, but dioxin and hydrogen chloride emission levels were higher than anticipated. Although NSF could take steps to mitigate the levels of these emissions and reduce their environmental impact, I have decided that incineration is no longer the proposed action. NSF will still complete an ongoing environmental assessment of alternatives for disposal of McMurdo's food waste, including returning the waste to the United States.

In fact, the emissions testing data referred to by Dr. Sullivan demonstrated that NSF's "state of the art" incinerator releases concentrations of dioxins almost an order of magnitude greater than the EPA standard for large municipal waste incinerators. Nevertheless, even though this example makes it clear that any incinerator operating in Antarctica will despoil the environment, the administration proposal would still allow incineration to proceed there.

This is particularly troubling because the administration proposal fails to articulate a specific standard like that in the Clean Air Act governing municipal waste incinerators.[13] Rather, it calls for the development of standards based on "criteria" in that Act, "taking into account the unique circumstances of Antarctic logistics, operations, and the Antarctic environment." See Section 6(e)(5). Moreover, while the administration proposal would allow EPA to concur in regulations issued by NSF governing incineration, it would authorize NSF (following consultation with EPA) to make the threshold decision as to whether

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[13] Section 129 of the Clean Air Act requires EPA to promulgate a standard that "reflects the maximum degree of reduction in emissions . . . determine[d] to be achievable for new or existing units . . . ." 42 U.S.C. § 7429(a)(2). In contrast, under the Protocol, wastes may be burned in incinerators "which to the maximum extent practicable reduce harmful emissions" and that standard is repeated in NSF's regulations. 45 C.F.R. § 671.12(e).

incineration should go forward in Antarctica in the first place. This scheme, which does not permit EPA to prevent incineration in Antarctica, appears to contravene the findings of the Committee on Antarctic Policy and Science established under the auspices of the National Academy of Sciences ("NAS"). Among other things, that Committee (which included a number of Antarctic scientists) suggested that federal agencies other than NSF should play a larger role than currently provided under existing law both in establishing regulations and issuing permits for U.S. actions in Antarctica. In pertinent part, the Committee recommended that:

> The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.

In addition, the administration proposal is also inconsistent with another of the Committee's recommendations, which declared:

> Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National Science Foundation for a wastewater treatment facility and conduct periodic inspections.

Despite this admonition, Section 5(g)(2)(E) of the administration proposal would authorize NSF, following "consultation" with EPA, to issue a permit to itself for incineration in Antarctica.

F. Discharges of Untreated Sewage into Antarctic Waters

At the same time, the Protocol's standard and existing U.S. requirements governing discharges into the ocean of sewage differ markedly. Under Section 403 of the Clean Water Act, discharges into the ocean may only be permitted by the EPA in compliance with strict criteria and standards relating to the effects of

such disposal on the marine environment.[14] 33 U.S.C. § 1343. In contrast, the Protocol authorizes parties to discharge sewage and domestic liquid wastes "directly into the sea . . . provided that: such discharge is located, wherever practicable, where conditions exist for initial dilution and rapid dispersal; and large quantities of such wastes . . . shall be treated at least by maceration." Notwithstanding these differences, the administration proposal now seeks to incorporate the Protocol standard into U.S. law, even though NSF officials testified earlier this year that secondary treatment should be required for sewage discharges in Antarctica. Specifically, NSF's former Director of its Division of Polar Programs advised a Subcommittee of the House Science, Space and Technology Committee that:

> [T]here's no question that the primary treatment [of sewage outfall] that is allowed under the Treaty does not suffice. And at least secondary treatment -- that is, the removal of all solids -- has to be undertaken. I believe that we should follow the example of the Italian program. They have a pretty complete sewage treatment plant with biological rotating filters and everything. So that their effluent to the environment is about as clean as you can get it. I think we should strive to follow that example. It will be much more difficult. While they deal with 60 people in the summer, we have 1,200, but there's no question that this is a major issue that needs to be addressed in comprehensive fashion.[15]

Beyond the inconsistencies between NSF's testimony earlier this year and

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[14] Such discharges must be consistent with guidelines established by EPA. Under the Act, such guidelines must focus on degradation of the oceans and must include the effect of the disposal of pollutants on: human health or welfare, plankton, fish, shellfish, wildlife, shorelines, beaches, marine life, esthetics, recreation, and economic values. They must also focus on the persistence and permanence of the effects of such disposal, other possible locations and methods of disposal or recycling of pollutants including land-based alternatives, and the effect on alternate uses of the oceans, such as scientific study. 33 U.S.C. § 1343(c).

[15] NSF may have reached this conclusion in light of recent published studies demonstrating that untreated wastes discharged from McMurdo Station are, at times, entering the water intake for that base. See Howington, J.P., McGeters, G.A., Barry, J.P., and Smith, J.J. (1992). Distribution of the McMurdo Station Sewage Plume. Mar. Poll. Bull. 25: 324-327; and Venkatesan, M.I. and Mirsadeghi, F.H. (1992). Coprostanol as Sewage Tracer in McMurdo Sound, Antarctica. Mar. Poll. Bull. 25: 328-332.

the current administration position, the administration proposal is also inconsistent with the aforementioned recommendation of the Committee on Antarctic Policy and Science concerning agency responsibilities. As set out above, it specifically suggested that EPA should be responsible for permitting sewage discharges. Nevertheless, the administration proposal (Section 5(g)(2)) would authorize NSF to issue a permit to itself for sewage discharges, following "consultation" with EPA. Moreover, the administration proposal is also inconsistent with the Ocean Dumping Act, which confers sole authority on EPA to issue permits for dumping of wastes at sea. Since the mid-1980's, EPA has established a moratorium on ocean dumping of wastes in Antarctic waters. Nevertheless, Section 5(g)(2)(D) of the administration proposal would provide authority to NSF to issue a permit to itself (following consultation with EPA) for the "disposal of the by-product of sewage treatment by rotary biological contacter process or similar processes from land into the sea, provided that the Director has determined that such disposal does not adversely affect the local environment."

G. Landfills and Leaded Gasoline

In addition, while the Protocol and, consequently, the administration proposal are silent on the need to ban landfills and leaded gasoline in Antarctica, there is much scientific evidence to support such action. Indeed, on the basis of such evidence, the 1975 Antarctic Treaty Code of Conduct on Waste Disposal recommended that "the use of leaded fuels or fuels containing ethylene bromide and ethylene chloride should be avoided" and it prohibited the burial of wastes at coastal stations. For inexplicable reasons, these provisions were not carried over into the Protocol. Yet, scientists have reported that the use of leaded gasoline in Antarctica, particularly by aircraft, may be disrupting studies of such pollution on a global scale.[16] Inasmuch as alternatives exist and they are reportedly being used by NSF in Antarctica, there is no reason that the legislation should not include a prohibition on the use of leaded gasoline in Antarctica.

Similarly, because impacts from landfills in Antarctica are well documented, the legislation should prohibit the burial of wastes in Antarctica. Indeed, in the late 1980s, the Scientific Committee on Antarctic Research

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[16] See Boutron C.F. and Wolff E.W. (1989) Heavy Metal and Sulphur Emissions in Antarctica. Atmospheric Environment 23, 1669-1675. ("Our ability to obtain information about pollution on a hemispheric scale by using Antarctic snow concentrations will be impaired by the major internal input of Pb suggested by our calculations. They indicate that, from this scientific viewpoint, it is desirable that the use of leaded gasoline in Antarctica, particularly from aircraft, be phased out.")

declared:

> The environmental impacts of disposing of solid wastes as landfill, even in small quantities, may be long-lasting in some situations. Changes to lake chemistry and soil substrates caused by waste dumps and landfill within a catchment may have significant long-term effects. Alterations to soils, characteristically low in organic content and nutrients, are possible with seemingly minor amounts of organic matter or low levels of toxic substances. Soil microbial communities may be changed rapidly and irreversibly by accidental introductions. For example, lakes with small catchments can receive a greater influx of nutrients from small amounts of human waste than is experienced naturally in thousands of years. In addition, there are a number of studies which have shown impacts on soil, littoral and benthic organisms near stations caused by persistent levels of chlorinated hydrocarbons (such as PCBs and DDT) leached from adjacent waste disposal sites.

Clearly, to avoid such impacts, the implementing legislation must also ban landfills in Antarctica.

H. Pollution of the Southern Ocean by Government Vessels

Section 9 of the Administration proposal would implement the Protocol's provisions on marine pollution contained within Annex IV through the Act to Prevent Pollution from Ships ("APPS"). 33 U.S.C. §§ 1901-1912. Specifically, subsection (c) of the proposal declares that "for the purposes of this chapter [APPS], the requirements of Annex IV of the Antarctic Protocol shall apply in Antarctica to all vessels over which the United States has jurisdiction, except for vessels listed in 33 U.S.C. 1902(b)." Because this latter section lists, among other things, "ships owned or operated by the United States when engaged in noncommercial service," the administration proposal would not apply the marine pollution provisions of the Protocol to vessels operated by the United States government in Antarctica. Beyond this troubling exception for government vessels, the administration proposal here again is plainly inconsistent with existing United States law. Indeed, under APPS, government vessels are, as of December 31, 1993, prohibited from disposing of plastics and garbage at sea. Yet, while the Protocol's marine pollution annex also bans the disposal of plastics and garbage in Antarctica, the administration proposal would not require government vessels to observe that requirement and it would appear to prevent application of the existing prohibition in APPS to such ships.

I. Undercutting Implementation of Article 3 of the Protocol

In addition to falling short of existing law, the administration proposal also fails to implement Article 3 of the Protocol. That Article directs each party to ensure that its nationals comply with certain "environmental principles" when planning and conducting any activity in Antarctica. Specifically, those principles require all activities in Antarctica to be planned and conducted so as to "limit adverse impacts on the Antarctic environment" and to "avoid" effects on climate, weather patterns, air and water quality, fauna and flora, endangered and threatened species, and important areas. At the same time, they require each party to plan and conduct activities in Antarctica on the basis of information sufficient to allow prior assessments of, and informed judgments about, their possible impacts; and to establish monitoring programs to verify predicted impacts and facilitate identification of possible unforeseen effects. Where an activity results in or threatens to result in impacts upon the Antarctic environment inconsistent with these principles, it must be modified, suspended, or canceled.

During negotiation of the Protocol, the Bush Administration successfully persuaded other nations to exempt Article 3 from the Protocol's compulsory dispute settlement procedures. To that end, it asserted that the principles were legally binding and should be enforced by each party against its nationals domestically. Yet, rather than doing so, the administration proposal further weakens Article 3 by only including them within a statement of national policy and providing the relevant agency with "residual discretionary authority" to implement them. To be sure, Section 13 of the administration proposal would create a petition process that allows interested parties to request the government to take action to address perceived problems. But that process may take up to 2 1/2 years to complete. As a result, there is nothing in the administration proposal that allows the relevant agency to prevent an activity from going forward in Antarctica that may be inconsistent with Article 3. Yet, despite that gap, the administration continues to assert that its proposal properly implements Article 3 -- an interpretation that is ultimately based on its belief that the Article does not establish legally binding requirements separate and independent from those contained within the Protocol's annexes.

The administration's interpretation of Article 3 flies in the face of the plain language of the Protocol and essentially renders the provision's principles superfluous. Moreover, it is inconsistent with the recent conclusion of the NAS Committee on Antarctic Policy and Science. It declared:

> A point of controversy that has emerged in discussions of the Protocol's implementation is whether Article 3, Environmental Principles, imposes substantive legal obligations, over and above the

> more specific rules in the Annexes. The Committee believes that Article 3 embodies principles of stewardship that go beyond the specific rules and procedures in the Annexes. Therefore, in becoming a party to the Protocol, the United States should seek to implement fully the principles of Article 3, including those concerning the decisionmaking process for permitting particular activities in Antarctica. Implementing legislation should recognize and incorporate the environmental principles of the Protocol (Article 3) so that agencies will be directed firmly along their administrative pathways. As the same time, however, these principles should be seen as too general to create specific legal requirements for individuals acting in Antarctica in the absence of some process or duty otherwise imposed by the legislation.

Accordingly, the implementing legislation must expressly make it unlawful for any party to conduct an activity in Antarctica inconsistent with the principles of Article 3 and this provision must be enforced through a permitting scheme. Only in this way can the U.S. fulfill its obligation to modify, suspend, or cancel any activity planned or conducted in Antarctica that is inconsistent with the principles of Article 3.

J. Deferring Action on a Burgeoning Antarctic Tourist Industry

Although remote and generally inhospitable, Antarctica is now visited by thousands of tourists each year who wish to see the continent's pristine environment before it could be despoiled. While most tourists are seriously concerned about protecting Antarctica, their visits are often localized, repetitive, and frequently occur at breeding grounds for seals, penguins, and other seabirds. Such visits place additional stress on these species, and could cause animals to abandon their breeding sites or increase the vulnerability of their eggs and young to predation. Indeed, the potential for such impacts is heightened by a significant increase in the number of tourists visiting Antarctica during the past decade.[17] During the 1982/83 season, approximately 721 tourists visited

[17] Total numbers of tourists visiting Antarctica during just the past three seasons for which data are available (1989-90, 1990-91, and 1991-92) were 2,581, 4,842, and 6,495. Virtually all of these tourists, many of whom were either American or travelled to Antarctica on U.S. excursions, toured Antarctica aboard ships. While the total number of Antarctic tourists may seem small when compared to tourism in other parts of the world, it must be emphasized that tourist expeditions in Antarctica are concentrated in a relatively few, small wildlife sites during the breeding season. See Enzenbacher, Antarctic Tourism and Environmental Concerns, 25 Marine Poll. Bull. 258 (1992).

Antarctica. Approximately 6,500 tourists reportedly visited Antarctica during the 1992-93 season. While these figures may appear small when compared to the total number of visitors visiting other parts of the world, it must be emphasized that most Antarctic tourist visits occur at only a few sites during a relatively short period of time (approximately three months) when Antarctic wildlife are breeding. At the same time, it must be noted that the Antarctic seaborne tourist industry is changing from one involving small expedition ships to vessels capable of carrying up to 800 passengers.

In anticipation of the potentially adverse impacts from a burgeoning tourist industry in Antarctica, a number of tour companies have formed the International Association of Antarctica Tour Operators (hereafter "IAATO") and pledged to follow certain voluntary guidelines. Those guidelines are based, in part, on earlier Treaty recommendations relevant to tourism. While that effort was a welcome development, it is not sufficient to govern a growing U.S. tourist industry in Antarctica. In fact, the IAATO guidelines do not constitute legally enforceable requirements. This is evidenced by one IAATO member's consistent violations of two rules set out in the IAATO guidelines, which require tour operators to (1) "ensure that for every 20-25 passengers there is 1 qualified naturalist/lecturer guide to conduct and supervise small groups ashore" and (2) "limit the number of passengers ashore to 100 at any one place at any one time." Despite these guidelines, NSF's observer program documented clear violations two years ago by one company -- a charter member of IAATO. Although IAATO testified last year that non-compliance would result in revoking membership, the same company again operated in Antarctica this past year as a member of IAATO.

Unfortunately, despite the threat of increasing tourist activities in Antarctica, the administration proposal largely defers action on any significant measures to prevent environmental impacts. To be sure, the Protocol requires tour operators to prepare environmental impact assessments in connection with their expeditions to Antarctica. But the administration proposal would only require the EPA to promulgate regulations for nongovernmental expeditions, consistent with Annex I of the Protocol, within 24 months of enactment of the implementing legislation.[18] Beyond that delay, the administration proposal

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[18] Assignment of this responsibility to EPA, rather than the Council on Environmental Quality ("CEQ"), was apparently premised on the assumption that CEQ's responsibilities for overseeing implementation of NEPA will be transferred to EPA. However, with the recent agreement between the Congress and administration to establish an Office of National Environmental Policy Act Compliance in the White House, EDF believes that office should be responsible for establishing rules for environmental assessment of non-governmental

makes no attempt to resolve outstanding legal issues concerning compliance with and enforcement of this requirement for tourist expeditions. One such issue concerns determinations that a particular expedition does not have "more than a minor or transitory impact" on the environment and therefore the operator need not prepare a comprehensive environmental evaluation. The administration proposal offers no guidance as to who makes such determinations and who has the right to challenge such findings. Ultimately, EDF believes that an agency such as NOAA or EPA must be responsible for reviewing such determinations and that finding must be subject to judicial review.

Moreover, while assessment of the environmental impact of tourist expeditions will clearly be useful, the environmental assessment process alone only creates procedural requirements. Hence, even if a tour operator documents environmental impacts, there is nothing in the EIA provisions that requires that operator to avoid or mitigate such impacts. Here too, the administration proposal is inadequate. It only calls for a two year study to be undertaken by the State Department "to determine whether or not additional measures should be taken with respect to Antarctic tourist activities." See Section 12. Indeed, that proposal falls short of what the U.S. tourist industry itself has testified is necessary for environmental protection in Antarctica. Last year, a representative from IAATO testified before the House Merchant Marine and Fisheries Committee that it supported creation of a permitting scheme to regulate tourism in Antarctica. Specifically, in response to a question from the Committee concerning IAATO's support for a permitting scheme administered by NOAA to govern tourist operations, Mr. John Splettstoesser stated:

> A permitting scheme should be welcomed by all, not only tour operators but anyone working in Antarctica, because it provides for a standardized procedure with necessary control of all activity. Only in this way can responsible tourism, and other activities, be successful in efforts to minimize impacts on the vulnerable environment of Antarctica. The National Oceanic and Atmospheric Administration already has experience in sponsoring research programs in Antarctica, and would provide the experience and leadership role required for the permitting responsibility."[19]

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expeditions in Antarctica.

[19] See Antarctic Treaty Protocol on Environmental Protection: Hearings before the Subcomms. on Ocean., Great Lakes and the Outer Contin. Shelf, Coast Guard and Navig., and Fisheries and Wildlife Conserv. and the Envt., of the House Comm. on Merchant Marine and Fisheries, 102d Cong., 2d Sess. 162 (1992).

One need only look at impacts from uncontrolled tourist operations in the recent past to conclude that a regulatory program should be established. These impacts include an oil spill on the Antarctica Peninsula from an Argentine supply vessel carrying 81 tourists (including approximately 40 U.S. citizens); helicopter flights sponsored by a U.S. tour company that reportedly scattered penguins in terror on each landing and take-off; and disruption of a number of sensitive wildlife breeding sites by large groups of tourists. In light of the dramatic growth in Antarctic tourism, it is clear that a regulatory program should not await an additional study or the exercise of an agency's discretionary authority. Indeed, while the Protocol may contain general prohibitions against certain tourist activities, it does not specify minimum viewing distances for Antarctic wildlife; limit the frequency, size, and duration of visits to sensitive wildlife sites; require tour operators to utilize an appropriate number of certified staff to supervise such visits; or establish a program of coordination, monitoring, observation, and reporting for all U.S. tour operator visits to Antarctica. The implementing legislation should direct NOAA to do this.

K. Fishing Expeditions in Antarctica

At the same time that the administration proposal fails to take any action to address tourism in Antarctica, it also does not expressly apply the principles and other provisions of the Protocol and annexes to fishing expeditions in Antarctica. Such expeditions are clearly subject to international regulation under the Convention for the Conservation of Antarctic Marine Living Resources ("CCAMLR") and domestic regulation by NOAA under the Antarctic Marine Living Resources Convention Act. However, the administration appears to have taken the position that the Protocol does not govern these activities. Such an interpretation conflicts with Article 8(2) of the Protocol, which applies to "all governmental and non-governmental activities in the Antarctic Treaty area for which advance notice is required in accordance with Article VII(5) of the Antarctic Treaty." Moreover, while the Protocol may be silent on the extent to which its provisions apply to fishing expeditions, CCAMLR itself suggests that the provisions of the Protocol should govern fishing activities.

Specifically, CCAMLR parties that are not members of the Antarctic Treaty must "observe as and when appropriate the Agreed Measures for the Conservation of Antarctic Fauna and Flora and such other measures as have been recommended by the Antarctic Treaty Consultative Parties in fulfillment of their responsibility for the protection of the Antarctic environment from all forms of harmful human interference." Clearly, if CCAMLR explicitly extends the Treaty's recommendations to fishing activities by non-Treaty members, then it can only follow that the harvesting activities of Treaty parties must also comply with such measures. Inasmuch as CCAMLR acknowledges the importance of subjecting fishing activities to environmental measures adopted under the

Treaty, the Protocol should not be construed so as to undermine that important policy. Accordingly, the implementing legislation should apply the Protocol to fishing expeditions in Antarctica and it should define the term "Antarctica" in the same way that it is defined under the Antarctic Marine Living Resources Convention Act.

L. Citizen Suits and Federal Agency Enforcement

As the Committees well know, NSF has been slow to implement certain of its non-discretionary duties under the ACA. Indeed, almost 15 years passed before NSF promulgated mandatory regulations governing pollution in Antarctica.[20] Of course, in the absence of such regulations, NSF's facilities in Antarctica seriously contaminated the environment with PCBs, heavy metals, asbestos, and dioxins. And, even if regulations outlawing the activities that resulted in this pollution had been in place, it is rather unlikely that NSF would have brought enforcement actions against itself to prevent such problems. Indeed, NSF has refrained from bringing enforcement actions against others who clearly violated the ACA when they scattered penguins in terror during helicopter flights or illegally entered internationally protected areas. To be sure, in testimony before the Merchant Marine and Fisheries Committee last year, NSF stated that its Inspector General had found its enforcement activities under the ACA to be "generally fair and in keeping with the overall intent of the ACA." However, NSF officials failed to apprise the Committee that the NSF Inspector General went on to criticize the agency over its failure to "require implementation of more formal processes" and to designate, train, or empower any officers to enforce the ACA.[21]

Nevertheless, while the administration proposal largely confers regulatory and permitting responsibilities to NSF, it does not create any mechanism to ensure that NSF and other agencies properly implement and enforce the legislation. In this respect, it will be important for the legislation to include a

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[20] At the same time, the other agency charged with issuing regulations under the ACA -- the State Department -- has failed to promulgate mandatory regulations governing advance notifications under Section 7 of the ACA. That Section declares: "The Secretary of State shall prescribe such regulations as may be necessary and appropriate to implement, with respect to United States citizens, paragraph 5 of Article VII of the Treaty pertaining to the filing of advance notifications of expeditions to, and within, Antarctica." 16 U.S.C. § 2406.

[21] See Office of the Inspector General, National Science Foundation, Semiannual Report to the Congress, Number 6: October 1, 1991-March 31, 1992, at 25-26.

provision that allows citizens to bring lawsuits and which addresses, to the extent possible, standing problems created by Lujan v. Defenders of Wildlife, 112 S.Ct. 2130 (1992). As in other citizen suit provisions, the legislation should authorize any citizen to commence a civil action in U.S. District Court against any person (including the United States or any other governmental instrumentality or agency) who is alleged to be in violation of any standard, limitation, regulation, permit, or order issued under the Act; and against any federal agency where there is alleged a failure of that agency to perform any act or duty under the Act which is not discretionary.[22]

The administration opposes a citizen suit provision that allows for enforcement actions because it believes it would lead to "frivolous lawsuits" in which plaintiffs successfully enjoin scientific research projects in Antarctica. Yet, that argument ignores Rule 11 of the Federal Rules of Civil Procedure, which is designed to discourage such tactics. At the same time, it overlooks the fact that any court considering injunctive relief must consider the likelihood that the moving party will prevail on the merits, the threat of substantial harm to the opposing party, and whether the public interest would be served by an injunction. See National Wildlife Fed'n v. Burford, 835 F.2d 305, 318 (D.C. Cir. 1987). Clearly, such safeguards will ensure that frivolous lawsuits do not impede research activities in Antarctica. At the same time, the administration's position ignores the critical importance of citizen enforcement actions. In fact, the Justice Department recently touted such provisions, stating in pertinent part that:

> These provisions represent a recognition by Congress that the enforcement of the nation's environmental laws is too important to leave to the exclusive province of the Federal Government and that a valuable public service is performed when private citizen groups

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[22] At least 16 environmental laws contain citizen suit provisions. These laws are the (1) Clean Air Act (42 U.S.C. § 7604); (2) Clean Water Act (33 U.S.C. § 1365); (3) Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. § 9659); (4) Deep Seabed Hard Mineral Resources Act (30 U.S.C. § 1427); (5) Deepwater Port Act (33 U.S.C. § 1515); (6) Emergency Planning and Community Right-to-Know Act (42 U.S.C. § 11046(a)(1)); (7) Endangered Species Act (16 U.S.C. § 1540(g)); (8) Energy Policy and Conservation Act (42 U.S.C. § 6305); (9) Hazardous Liquid Pipeline Safety Act (49 App. U.S.C. § 2014); (10) Ocean Thermal Energy Conversion Act (42 U.S.C. § 9124); (11) Outer Continental Shelf Lands Act (43 U.S.C. § 1349); (12) Powerplant and Industrial Fuel Use Act (42 U.S.C. § 8435); (13) Resource Conservation and Recovery Act (42 U.S.C. § 6972); (14) Safe Drinking Water Act (42 U.S.C. § 300j-8); (15) Surface Mining Control and Reclamation Act (30 U.S.C. § 1270); and (16) the Toxic Substances Control Act (15 U.S.C. § 2619).

join in the effort to secure compliance with environmental obligations.

Hence, a citizen suit enforcement provision would ensure that the relevant federal agencies promulgate regulations in a timely manner and that they and their permit applicants comply with the standards and regulations established under the Act. Moreover, it would be consistent with the President's campaign promise to "support legislation that allows ordinary citizens to sue federal agencies that ignore environmental laws and regulations designed to preserve our environment -- so government bureaucrats are made accountable for proper and effective environmental law enforcement."[23]

In addition to providing EPA and NOAA with authority to promulgate regulations and issue permits implementing the Protocol, the implementing legislation must also contain a provision allowing those agencies to bring enforcement actions against NSF and other federal agencies operating in Antarctica. Needless to say, the administration proposal does not contain such a provision. Indeed, the administration proposal would only allow NSF to initiate suspension or cancellation of the permit that it issues itself. (Section 5(e)). A Moreover, nothing in the administration proposal would allow NOAA or EPA to bring enforcement actions against NSF or other federal agencies that violate the Act. A model for such a provision may be found in the Federal Facilities Compliance Act, which authorizes EPA to bring actions against other federal agencies for violations of federal environmental statutes. 106 Stat. 1506.

M. A Loophole in the Mining Ban

Article 7 of the Protocol prohibits all activities relating to mineral resources except for "scientific research." In the past, certain nations have sponsored seismic surveys for off-shore oil and gas resources in Antarctica and identified such efforts as scientific research even though they did not release data from these activities under Article III(1)(c) of the Antarctic Treaty. In recognition of this practice and its potential for creating a large loophole that could swallow the mining ban, the Antarctic Protection Act called for an international agreement which ensures that the results of all scientific investigations relating to geological processes and structures are made openly available to the scientific community. Although the Protocol does not contain such measures, the implementing legislation should address this potential problem at least for U.S. citizens by expressly defining the term "Antarctic mineral resource activity" in Section 3(a)(3) to include the collection of geological, geochemical, or geophysical data (including unpublished data) that is not released to the public, upon

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[23] See The Clinton-Gore Plan on Protecting Our Environment.

request, within 3 years from the date of its collection.

N. Other Issues Raised by the Administration Proposal

In addition to the issues set out in detail above, the administration proposal raises other significant problems. These are briefly described below:

(1) Section 3(10) defines the term "harmful interference" in the context of impacts to "birds or seals." Yet, other parts of the proposal, including the taking prohibition, regulate impacts to native birds and mammals. So as to encompass whales and other marine mammals within the harmful interference provision, the word "seal" should be replaced with the term "native mammals."

(2) Section 4(c) of the administration proposal creates an "emergency" exception for compliance with the legislation's prohibitions where the act involved the "safety of human life or of ships, aircraft, or equipment or facilities of high value, or the protection of the environment." This exception is much broader than that currently provided under existing law. Indeed, the ACA only allows for noncompliance if the act was committed under emergency circumstances to prevent the loss of human life. 16 U.S.C. § 2403

(3) The administration has sought to persuade Congress that its proposed schemes providing for concurrence in the issuance of pollution control regulations with EPA and permits for incidental taking with NOAA would ensure that NSF does remain the fox in the hen house. Yet, in at least two important respects, NSF would appear to actually have unilateral authority over these matters. First, under Section 5(g)(3) of the proposal, it is NSF (apparently without the concurrence of NOAA) that determines which impacts of research actions are "unavoidable." Second, under Section 6(f), it appears that only NSF can initiate the process of designating additional items as "prohibited wastes" or "prohibited products."

(4) Section 5(g)(2) of the administration proposal authorizes NSF to issue permits for the disposal of waste in Antarctica if such disposal does not "pose a substantial hazard to human health or the Antarctic environment." This provision is inconsistent with and less protective than existing law. Currently, under the ACA, NSF must "prevent or control the discharge or other disposal of pollutants" in Antarctica. 16 U.S.C. § 2405(b)(7). The Act defines pollutants as any substance liable to "create hazards to human health, to harm living resources or marine life, to damage amenities, or to interfere with other legitimate uses of Antarctica. 16 U.S.C. § 2405(b)(6).

(5) Section 6(e)(8) of the administration's proposal limits the obligation to clean up past and present waste disposal sites to those on land. As a result, the

legislation would not require NSF to redress the most seriously polluted sites in Antarctica (e.g., Winter Quarters Bay), which lie immediately offshore from the principal U.S. bases in Antarctica. With routine dumping of wastes into Antarctic waters by NSF and the Navy, such sites are heavily contaminated with PCB's, heavy metals, and petroleum substances. That pollution, in turn, has had significant adverse impacts on unique marine life.

(6) Inexplicably, Section 6(j) of the proposal would provide NSF and EPA with up to 3 years to promulgate pollution control regulations (other rules are due within 24 months of enactment -- an already lengthy delay). Inasmuch as it took NSF 15 years to issue pollution control regulations under the ACA, it is rather disappointing that the administration now seeks an additional three years to issue pollution control regulations that will necessarily reflect EPA views.

Once again, thank you for the opportunity to present testimony to the Committees. I would be happy to answer any questions that the Committees may have.

Statement of the Honorable Gerry E. Studds, Chairman
Committee on Merchant Marine and Fisheries
at a Joint Hearing of the
Committees on Foreign Affairs
and Merchant Marine and Fisheries
on
Implementing Legislation for the Protocol on Environmental Protection to the Antarctic Treaty

November 16, 1993

Mr. Chairman, thank you for your cooperation with my Committee in scheduling this joint hearing this afternoon on implementing legislation for the Protocol on Environmental Protection to the Antarctic Treaty. The Protocol provides, for the first time, comprehensive environmental protection for Antarctica.

Antarctica is one of those places that few will ever visit but most can appreciate its importance to mankind. Antarctica has been an experiment in international cooperation and peaceful co-existence since the Antarctic Treaty was adopted in 1959. Since that time, several agreements have been concluded to address specific Antarctic issues, such as the Convention on the Conservation of Antarctic Marine Living Resources governing fishery resources and the Convention for the Conservation of Antarctic Seals. But, the Protocol represents the most comprehensive environmental regime yet negotiated to protect the Antarctic continent.

Negotiating the Protocol was not an easy task. The Bush Administration was slow to recognize the importance of protecting Antarctica from the potential hazards of mineral extraction. Our old friend and former colleague, Congressman Silvio Conte, was the first Member of Congress to understand the importance of keeping Antarctica pristine so that valuable scientific research could continue to be conducted there. As a result of legislation he introduced, prohibiting U.S. companies from mining in Antarctica and calling on the Secretary of State to negotiate a comprehensive

agreement prohibiting all nations from mining in Antarctica, we now have the Protocol on Environmental Protection. We owe a debt of gratitude to Silvio Conte's foresightedness.

Last Congress, the Senate gave its advice and consent to the Environmental Protocol, but did not pass the requisite implementing legislation in order for the President to ratify it. This task remains for this Congress.

Earlier this year, I introduced H.R. 1066, the Antarctic Environmental Protocol Act of 1993, as a model for the Clinton Administration to use in preparing its implementing legislation. I am pleased that a number of the concepts in H.R. 1066, such as the need for comprehensive legislation and granting other agencies with environmental expertise, such as NOAA and EPA, a greater role in the U.S. Antarctic Program, have been included in the Administration's draft bill.

I understand that, just today, the Administration has formally transmitted its proposal to Congress. While it may be too late for action this session, it will give us a basis for completing legislation next session. I am especially pleased that the issue of citizen suits was favorably resolved and is included in the Administration's bill.

Finally, I want to make sure that any implementing legislation does not undermine the Court of Appeals decision that the National Environmental Policy Act (NEPA) applies to U.S. activities in Antarctica, and that any deviation from other environmental laws to U.S. operations, such as the Clean Water Act and Clean Air Act, be done only for a very good reason relating to the unique circumstances of working on the ice.

Thank you, again, Mr. Chairman, for convening this joint hearing with the Merchant Marine and Fisheries Committee. I look forward to working with you on the adoption of legislation to allow the United States to ratify the Protocol on Environmental Protection.

STATEMENT BY THE HONORABLE CURT WELDON (R.-PA) AT THE JOINT FULL COMMITTEE HEARING ON H.R. 1066 THE ANTARCTIC ENVIRONMENTAL PROTOCOL ACT OF 1993: NOVEMBER 16, 1993

Chairman Studds and Chairman Gejdenson, I commend you for holding this joint hearing on legislation to implement the environmental Protocol to the Antarctic Treaty.

Antarctica has value to the world not only as a beautiful but remote ecosystem, but also as a land of science. There is no reason why science and environmental protection cannot coexist there, especially since it is exactly the pristine condition of Antarctica which makes it such a valuable natural laboratory.

The National Science Foundation should be commended for literally cleaning up its act by closing old landfills and carting tons of waste off the continent. The new waste regulation issued by the Foundation, while long overdue, are also an important step in protecting the unique Antarctic landscape.

However, I think that we should ask ourselves if it wouldn't make sense to have an agency with greater expertise in environmental protection, like the National Oceanic and Atmospheric Administration (NOAA), oversee the environmental aspects of U.S. activities in Antarctica. Marine Living Resources Convention Act and for the mining ban under the Antarctic Protection Act of 1990.

I hope that the cooperation shown between our two Committees in holding this hearing can be matched by cooperation between the Federal agencies in implementing the Protocol. Both are necessary to ensure that Antarctica retains its untarnished character.

Thank you, Messrs. Chairman.

STATEMENT OF REP. SOLOMON P. ORTIZ, CHAIRMAN, SUBCOMMITTEE ON OCEANOGRAPHY, GULF OF MEXICO, AND THE OUTER CONTINENTAL SHELF

As Chairman of the Oceanography Subcommittee, like my colleagues, I too am strongly committed to ensuring that the pristine environment of Antarctica is maintained and preserved.

I have been fortunate enough to visit Antarctica, and for those who have not been down there, let me tell you, it is a stunningly beautiful place, and one that is of profound scientific importance.

As such, I commend Chairman Studds and Chairman Gejdenson for holding this hearing today on the implementing legislation to the 1991 Protocol on Environmental Protection to the Antarctic Treaty.

I believe that the Congress and the Administration must move forward on this matter and adopt a consensus bill that can serve to implement our commitment to an international ban on mining and oil drilling in the Antarctic and provide increased authority for our government to regulate and control waste disposal in this fragile ecosystem and protect areas of special scientific value.

I am especially interested in hearing today from the National Science Foundation about its activities in the Antarctic and how it intends to carry out its commitments and responsibilities in administering the U.S. Antarctic Program and the policies of the Protocol.

Also, like others, I am interested in hearing from the Administration on how it proposes to delineate regulatory responsibilities for the region, and how it intends to resolve the issues of judicial review and citizen suits for federal activities of the United States conducted either jointly or independently.

Lastly, I hope that the witnesses will touch on the existing and potential impacts that a growing tourist industry in Antarctica may have on its fragile ecosystems, and what steps can be taken to mitigate any harm.

I again want to thank the two Chairman for conducting this hearing, and I hope that I will help us move forward on this urgent matter early next session.

STATEMENT BY THE HONORABLE JACK FIELDS (R.-TX) RANKING REPUBLICAN MEMBER, COMMITTEE ON MERCHANT MARINE AND FISHERIES, AT THE JOINT HEARING ON IMPLEMENTING LEGISLATION FOR THE ENVIRONMENTAL PROTOCOL TO THE ANTARCTIC TREATY

Mr. Chairman, and Ranking Minority Members, I welcome the cooperation of our two Committees today in convening this hearing. With the introduction of H.R. 1066, the Antarctic Environmental Protocol Act of 1993, Chairman Studds has continued the Merchant Marine and Fisheries Committee tradition of looking out for our oceans, even when frozen. I can see that his bill guided the hand of the Clinton Administration, at least in part, in drafting its implementing legislation for the Antarctic Treaty Protocol.

The Clinton Administration also benefited from the work of President Bush, who laid the foundation for preserving Antarctica as a natural laboratory by negotiating the Protocol and its Annexes, as well as signing into law the Antarctic mining ban authored by the late Silvio Conte. I think we can all agree that the Antarctic environment should be maintained in its untainted state and that earlier, destructive waste disposal should be remedied if cleaning the sites up is less harmful to the environment than allowing them to remain. The question is whether some environmentally protective measures which work in more temperate climates may be appropriate for the unparalleled conditions of our most removed continent. Most of us have never visited Antarctica and cannot appreciate the danger posed by its weather and isolation.

In addition, I recognize that there is some tension between the Federal agencies over who should act as steward of Antarctica's natural beauty. Chairman Studd's bill grants much of this authority to the National Oceanic and Atmospheric Administration (NOAA). While NOAA is one of our Committee's favorite agencies, this agency is already stretched very thin. Without significant new sources—which may be difficult to obtain—I wonder about the wisdom of further increasing the burden on this agency.

Nevertheless, I look forward to hearing from our distinguished witnesses and I am anxious to hear their thoughts on the appropriate text of implementing legislation for the Protocol.

Thank you, Mr. Chairman.

TESTIMONY OF DARREL SCHOELING, IAATO SPOKESMAN
on the
ANTARCTIC ENVIRONMENTAL PROTECTION ACT OF 1993
before the
HOUSE COMMITTEE ON FOREIGN AFFAIRS
and the
HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

NOVEMBER 16, 1993

Antarctic Environmental Protection Act of 1993

Thank you for the opportunity to comment on the proposed "Antarctic Environmental Protection Act of 1993." As a spokesman for the International Association of Antarctica Tour Operators (IAATO), I appreciate the ongoing commitment by the United States and Antarctic Treaty System to include IAATO and other interested parties in these critical discussions.

Responsible tourism is a legitimate and important human activity in the Antarctic with a 35-year history. As an industry, we have taken a leading role in educating our public about the Continent and the Antarctic Treaty system. We are privilged visitors to this last continent -- and committed to its future.

We welcome the formalization of procedures to assess and monitor environmental impact of human activities within the Treaty area as mandated by the landmark Protocol of Environmental Protection to the Antarctic Treaty, signed October 4, 1991 in Madrid.

Antarctic Environmental Regulation
Under the provisions of the Antarctic Treaty of 1959, a number of measures were instituted to protect the environment of Antarctica and to promote research on this last continent. Building upon these measures, the parties to the Antarctic Treaty adopted the Protocol of Environmental Protection to the Antarctic Treaty in 1991. The Protocol designates Antarctica and its dependent and associated ecosystems as a natural reserve devoted to peace and science and sets forth a comprehensive framework for environmental protection, according priority to scientific investigation. It explicitly addresses all human activities, whether conducted by governments, commercial operators, tourism companies or private individuals. We applaud this approach.

On October 7, 1992 the United States Senate gave its advise and consent to this far-ranging document. To maintain its role as a leader within the Antarctic Treaty System and set new standards for effective protection of the Antarctic environment, the United States should take immediate action to enact effective implementing domestic legislation before the next Antarctic Treaty Consultative Meeting in Kyoto, Japan in April 1994. The proposed AEPA of 1993 is a welcome forward step.

Antarctic Tourism
By some estimates the total number of tourists visiting the continent over the last two Austral summers has outnumbered personnel involved in the national scientific and logistic programs in the Antarctic Treaty Area in each of these years -- and the great majority of these visitors have been from the United States. Since most tourists are ship-based, however, their time on land is less than one per cent of that of scientific and support personnel.

Tourists have built no stations, installed no power plants or established any other infrastructure. The Code of Guidance for Visitors to the Antarctic and Code of Guidance for Tour Operators in Antarctic developed by IAATO are designed to ensure continued minimal disturbance to the Antarctic environment and science.

With proper safeguards as called for by the Environmental Protocol and its annexes (including prior assessment of potential environmental impact, well-written management plans for protected areas and effective monitoring) responsible tourism will continue with minimal impact on the environment or conduct of science.

Tourism should be treated no differently than any other human activity, an approach embraced by the Protocol and explicit in the proposed Antarctic Environmental Protection Act of 1993.

Here we elaborate upon several outstanding concerns:

Section 2: Environmental Principles (Article 3)
Section 2 (C) (3) of the proposed AEPA (p.3) adopts the language of Article 3 of the Protocol and states as national policy of the United States that

> "activities in Antarctica are to be planned and conducted on the basis of information sufficient to allow prior assessment of and informed judgement about their possible impact on the Antarctic environment and its associated ecosystems and on the value of Antarctica for the conduct of scientific research."

The proposed AEPA does not offer specific guidance or a regulatory framework for how this critical task is to be carried out. We lack information regarding the cumulative impact of activities, the possible combined effect of these activities or real evidence of the capacity to monitor impacts (also addressed in Annex I, Article 5).

We believe that necessary and appropriate regulations and procedures to incorporate these principles and ensure effective monitoring must be explicitly addressed in the implementing legislation with specific authority given to the appropriate federal agencies to accomplish these important tasks. These principles not just national policy but a mandate for research.

Section 4: Protection of Native Fauna and Flora (Annex II)
As prohibited acts "taking" and "harmful interference" adopt the language of Annex II. Unlike the Antarctic Conservation Act of 1978 no exception to permitting is made for "aiding or salvaging the remains of native mammals of birds." Is this now prohibited? Also, no useful definition of "disturbing" is offered. Disturbing an animal is to significantly effect its energy budget and/or effect its reproductive success.

Section 6: Regulations
What venues are available for public comment on the promulgation of regulations? This issue should be addressed in this important section, especially with reference to Specially Managed Areas (section 6, C, 5). The Secretary of State is empowered to require evidence of emergency response with advance notification of travel to Antarctica (as mandated by Article 7 (5) of the Antarctic Treaty). This requirement of the Protocol may be best addressed elsewhere.

Section 7: Environmental Impact Assessment (Article 8 and Annex 1)
In Section 7 (p. 27) the AEPA provides no definition of what constitutes "less than a minor or transitory impact" nor assigns responsibility for this determination. We remind the committee that the IAATO Code of Guidance mandates that the visits create no disturbance and leave no evidence of human activity. According to the Code of Guidance, the scope, intensity and duration of visits are carefully monitored and coordinated.

Also, it is not stated in Section 7 whether the decision as to the level of impact would be subject to public review.

The Protocol and proposed legislation explicitly covers <u>all</u> human activities and yet section 7 (C) calls for the EPA Administrator to promulgate specific regulations for nongovernmental activities. We question why this distinction is made.

Section 9: Prevention of Marine Pollution (Annex IV)
What constitutes a "vessel under U.S. jurisdiction" as defined in Section 9 (C) (p. 31) of the proposed AEPA on marine pollution? Annex IV of the Environmental Protocol (Article 2) states that the Annex applies to "ships entitled to fly its flag and any other ship engaged in or supporting its Antarctic operations while operating in the Antarctic Treaty area." A clarification would be useful.

Section 10: Committee for Environmental Protection (Article 11)
Article 11 of the Environmental Protocol provides for the appointment of a representative to the Committee for Environmental Protection "who may be accompanied by experts and advisors." This provision is not explicitly addressed in section 10 of the proposed AEPA (p. 33). A provision for advisors should be included in the language of the bill. We hope that the tour industry would be consulted.

Section 12
The proposed legislation calls for an interagency study of tourism in Antarctica (p. 34) to determine whether any additional measures should be taken with respect to Antarctic tourist activities within 24 months after the date of enactment. This would be more appropriately framed as "what additional measures should be taken to minimize impact of human activities on the Antarctic environment and the conduct of science" and referred to the Committee for Environmental Protection as stated in Article 12 of the Protocol.

Section 19
The proposed legislation mandates and elaborates the role and powers of an "Antarctic Conservation Officer," and gives this officer extraordinary powers, including the right to search -- without a warrant -- any vessel "if this officer has reasonable belief that a violation will be committed. It seems unreasonable to search a vessel without a warrant if this individual believes that some violation may occur in the future. The powers and role of the conservation officer are significantly expanded from those as stated in the Antarctic Conservation Act of 1978 and may result in unlawful search and seizure (Amendment 4 to the U.S. Constitution).

Annex V: Specially Managed Areas
The development of informed, clear management plans is key to the effective protection of the Antarctic environment and ask which agency is given this charge and whether it could be addressed in the proposed implementing legislation.

Code of Guidance for Visitors to the Antarctic

Under the provisions of the Antarctic Treaty of 1959, a number of measures were instituted to protect the environment of Antarctica and to promote scientific research on this continent. Building upon these measures, the Parties to the Antarctic Treaty adopted the Protocol on Environmental Protection in 1991. This protocol designates Antarctica, and its dependent and associated ecosystems, as a natural reserve devoted to peace and science, and sets forth a comprehensive framework for environmental protection.

The measures under the Antarctic Treaty and the Protocol, which are designed to preserve the environmental and scientific values of Antarctica, apply to all human activities. The following Code of Guidance will assist you in complying with these measures. Additionally, you should be aware of specific national laws and regulations implementing the Antarctic Treaty and the 1991 Protocol on Environmental Protection, which may apply to you.

Please encourage fellow visitors to follow your lead in minimizing human impact on this unique and protected ecosystem. We are committed to help to ensure that Antarctica will remain pristine for the enjoyment of future generations.

1. PROTECT THE ANIMALS. CAPTURING, HANDLING, DISTURBING, HARASSING OR INTERFERING WITH ANTARCTIC WILDLIFE IS PROHIBITED.

   Do not operate aircraft, boats or land vehicles, or walk in areas or in ways which affect the behavior or activity of wildlife:

   - never touch the animals;
   - give animals the right-of-way;
   - do not position yourself between a marine mammal and its path to the water, nor between a parent and its young;
   - maintain a distance of at least 15 feet (4.5 meters) from penguins, all nesting birds, and true seals, and 50 feet (15 meters) from fur seals. Irrespective of distance, back away when an animal's behavior changes as a result of your presence or proximity;
   - stay on the periphery of penguin colonies and outside groups of seals;
   - keep noise to a minimum and do not use flash photography;
   - do not feed the animals, either ashore or from a ship.

Most Antarctic species exhibit a lack of fear which would allow you to approach them; however, the austral summer is a brief period for courting, mating, nesting, rearing young and molting during which populations are particularly susceptible to disturbance. Disturbing nesting seabirds may cause them to abandon the nest and expose their eggs or young to predatory skuas, gulls, and to the cold. Disturbing seals with pups may agitate mothers and cause them to attack or abandon their own young. Disturbing some animals, notably fur seals and skuas, may cause them to attack you. To avoid unintentional disturbance: always be aware of your surroundings; maintain a low, quiet profile; and be particularly attentive while taking photographs.

2. WATCH YOUR STEP. WALKING ON, OR OTHERWISE DAMAGING ASSEMBLAGES OF MOSSES, LICHENS OR GRASSES IS PROHIBITED.

- do not land, drive or walk on Antarctic plants;
- do not collect samples of any plants.

Poor soil and harsh living conditions mean growth and regeneration of these plants is extremely slow. Most of the lichens, which grow only on rocks, hard-packed sand and gravel and bones, are extremely fragile. Simply walking on moss beds can cause damage that will take decades to recover. Where present, keep to established tracks or trails and avoid entering undisturbed areas.

3. KEEP ANTARCTICA PRISTINE. DISPOSAL OF WASTE, ENVIRONMENTAL POLLUTION, AND THE INTRODUCTION OF NON-INDIGENOUS SPECIES TO ANTARCTICA IS PROHIBITED.

Wildlife may ingest cigarette filters, film canisters, paper and other types of litter or use these items to build their nests. Plastic straps, netting and other debris can entangle animals. Introduced plants and animals might proliferate and cause harmful changes in the simple Antarctic environment:

- do not dispose of litter and garbage (including plastics, tissues and all other debris) ashore or into the Antarctic environment. All litter and garbage must be returned to a vessel or base for proper disposal. Litter and garbage must not be dumped overboard from ships except as permitted under Annex V of the MARPOL Agreement and as set forth in the Protocol on the Environment;
- do not discard or dispose of potentially harmful substances in Antarctica; polychlorinated biphenols (PCB's), polystyrene chips and pesticides are specifically prohibited;
- do not bring animals or plants into Antarctica;
- do not paint names or leave graffiti anywhere in Antarctica.

4. TAKE ONLY MEMORIES AND PHOTOGRAPHS. COLLECTING IS PROHIBITED.

Do not collect (remove or take away) biological or geological specimens or man-made artifacts. This includes eggs, fossils, other interesting or unusual rock specimens, whale or seal bone, or historical evidence of human presence in Antarctica.

5. RESPECT OTHER'S INTERESTS. ACTIVITIES CONDUCTED IN ANTARCTICA MUST BE PLANNED AND CONDUCTED TO ACCORD PRIORITY TO SCIENTIFIC RESEARCH AND PRESERVE ITS VALUE FOR RESEARCH.

Visits to scientific stations are subject to invitation or prior approval by the station manager. These visits require advance notification and confirmation. The station manager may deny visits or determine the manner in which they are carried out:

- do not enter buildings or any part of buildings unless specifically invited to do so. Respect the property, privacy and work of scientists and support personnel. The station is their home;
- do not interfere with scientific sites or equipment;
- do not interfere with scientific or logistic support work.

6. KNOW WHERE YOU ARE GOING. ENTRY INTO CERTAIN AREAS IS PROHIBITED OR SPECIALLY REGULATED.

Certain areas have been afforded special protection because of their ecological, scientific or historic value. Entry into these areas may be prohibited or specifically governed by a detailed management plan or other regulations, and may require a permit to enter:

- do not enter unoccupied or abandoned buildings or emergency refuges, except in case of emergency. If any equipment or food is used for emergency purposes, inform the nearest research station at the earliest opportunity and make arrangements for its replacement;
- do not enter historic huts unless accompanied by a properly authorized person. Nothing may be removed or disturbed within historic huts;
- do not enter Specially Protected Areas or Sites of Special Scientific Interest.

These protected areas are clearly delineated by markers and/or described in the official records of the Antarctic Treaty System. Historic huts are museums, which are officially maintained and monitored by Antarctic Treaty Parties.

7. PAY ATTENTION TO SAFETY. STAY WITH YOUR GROUP OR ONE OF THE GROUP LEADERS WHEN ASHORE.

Take note of and follow the advice and instruction of the leaders:

- never wander off alone or out of sight of leaders and other group members;

- do not walk onto glaciers or large snow fields. There is a real danger of falling into hidden crevasses.

AN ADDITIONAL NOTE FOR UNITED STATES CITIZENS

In addition to the Antarctic Treaty and the 1991 Environmental Protocol, which will result in new domestic legislation, two current United States laws govern conduct below 60° South. These regulations are legally binding for U. S. citizens and residents who visit Antarctica.

Marine Mammal Protection Act of 1972
This act prohibits U. S. citizens from taking or importing marine mammals, or parts of marine mammals, into the United States. Both accidental or deliberate disturbance of seals or whales may constitute harassment under the Act.

Antarctic Conservation Act of 1978 (Public Law 95-541)
This act was adopted by the United States Congress to protect and preserve the ecosystem, flora and fauna of the continent, and to implement the Agreed Measures for the Conservation of Antarctic Fauna and Flora. Briefly, the Act provides the following:

> In Antarctica the Act makes it unlawful, unless authorized by regulation or permit issued under this Act, to take native animals or birds, to collect any special native plant, to introduce species, to enter certain special areas (SPAs), or to discharge or dispose of any pollutants. To "take" means to remove, harass, molest, harm, pursue, hunt, shoot, wound, kill, trap, capture, restrain, or tag any native mammal or native bird, or to attempt to engage in such conduct."

Under the Act, violations are subject to civil penalties, including a fine of up to $10,000 and one year imprisonment for each violation.

Mission

IAATO is an international, not-for-profit organization made up of private tour operators and other interested parties whose goal is to advocate appropriate, safe and environmentally sound travel to Antarctica. We do so by coordinating activities within a mutually agreed set of guidelines; by strict adherence to the provisions of the Antarctic Treaty and other international agreements; by representing ourselves before the Antarctic Treaty organization, member governments and public by large; and by the training of and commitment to the highest quality, experienced staff.

Objectives

- To advocate, promote and practice safe and environmentally responsible travel to Antarctica
- To operate within the parameters of the Antarctic Treaty, Environmental Protocol, Annexes, MARPOL, SOLAS and other similar international agreements.
- To work toward the international adoption of Visitor and Tour Operator Guidelines at the Antarctic Treaty level.
- To create a corp of ambassadors for the continued protection of Antarctica through offering the opportunity to experience this continent first hand.
- To enhance public awareness and concern for the conservation of the Antarctic environment and ecosystem and to better inform the media, governments and other organizations of private sector travel to the region.
- To promote appropriate travel to the Antarctic as an important and valid activity that falls within the limits of the Antarctic treaty, Environmental Protocol and its Annexes.
- To support science in Antarctica through cooperation with Antarctic National Programs and logistical support for science.
- To foster continued cooperation among its members and to monitor our own programs, including the pattern and frequency of visits to specific sites within the Antarctic.
- To represent Antarctic tour operators to the Antarctic Treaty Organization, international conservation organizations and the public at large.
- To ensure the highest quality field personnel through evaluation of experience, continued training and education of our staff, officers and crew.

DARREL SCHOELING

Darrel Schoeling has organized and led expedition cruises to Baja California, the Galapagos Islands, Antarctica, the Canadian Arctic, Greenland, Madagascar and other great natural history destinations since 1985. For two years he was chief naturalist guide aboard a cruise vessel in the Galapagos Islands. Active in conservation issues, he was named in 1991 to the Antarctic Section of the U.S. State Department Advisory Committee and was a delegate to the XVIIth Antarctic Treaty Consultative Meeting in Venice in 1992. Darrel was a founding member of the International Organization of Antarctic Tour Operators and a co-author of its Code of Guidance for Antarctic Visitors and Code of Guidance for Antarctic Tour Operators.

A graduate of Brown University in biology, Darrel previously taught at the Collegiate School in New York and worked at the American Museum of Natural History.

Darrel is an enthusiastic naturalist and popular expedition leader with an affinity for the polar regions.

STATEMENT OF

LOUIS J. LANZEROTTI
Distinguished Member of the Technical Staff
AT&T Bell Laboratories
Murray Hill, New Jersey

and Chair,
Committee on Antarctic Policy and Science
Polar Research Board
National Research Council
National Academy of Sciences

on the Committee's Report
Science and Stewardship in the Antarctic

Before the

Committee on Foreign Affairs,
Subcommittee on Economic Policy, Trade and Environment

and

The Committee on Merchant Marine and Fisheries

United States House of Representatives

November 16, 1993

Chairmen and members of the Committees and Subcommittee: I am Louis Lanzerotti, Distinguished Member of the Technical Staff at AT&T Bell Laboratories, and Chairman of the Committee on Antarctic Policy and Science of the National Research Council's Polar Research Board. The National Research Council is pleased to provide testimony to you today on our Committee's report, Science and Stewardship in the Antarctic, which we believe should contribute to Congress' deliberations on implementation of the Environmental Protocol to the Antarctic Treaty. As a geophysicist with active research projects in Antarctica, I believe this is a subject of great importance.

The Committee was asked to identify the possible impacts on science from expanding human activities in the Antarctic; to evaluate the possible impacts on science projected from various political, institutional, and organizational scenarios being considered for managing human activities in the Antarctic; to provide an independent evaluation of U.S. policy options and their possible effects on the structure and functioning of science within the Antarctic Treaty System and within the United States; and to provide specific policy recommendations on the role of the antarctic scientist in the policy process. In addition to myself, the Committee consisted of 11 other members having expertise in antarctic science, environmental policy, law, and tourism. Support for the Committee's effort was provided by the Department of State and the National Research Council.

The Environmental Protocol is intended to protect the antarctic environment and establishes the objective of stewardship in the Antarctic Treaty System. At the same time, the Antarctic Treaty provides, and the Environmental Protocol specifically recognizes, that the primary purpose of human presence on the continent is to conduct scientific research. U.S. legislation and regulations entailed by implementation of the Protocol should reflect these two goals in a balanced, integrated manner. The Committee believes that, with appropriate implementation, science and stewardship goals in Antarctica can be achieved in a mutually reinforcing, rather than conflicting, manner.

The Protocol should be implemented with domestic legislation that provides a flexible, open process for decisionmaking on environmental issues, rather than rigid prescriptions which might ultimately fail to adequately protect the environment or make science so difficult to conduct that the best scientists are discouraged from work in Antarctica. It should be written so that the United States can take a leadership role in the conduct of environmentally sound science on the continent. Putting the goals of the Protocol into action nationally and internationally will require sound understanding of environmental processes and other technical issues. The U.S. representatives and agencies involved should seek the best available scientific advice in the development of effective approaches to environmental matters. The Committee believes the National Science Foundation (NSF) is the best qualified agency to continue leadership and rulemaking for the conduct of antarctic science, but that NSF needs to share its environmental responsibilities for implementing the Protocol and regulating activities with

other federal agencies with relevant and significant technical expertise.

The following is a summary of the Committee's key recommendations. Article 3 of the Environmental Protocol contains substantive principles of stewardship that should be incorporated in the implementing legislation so that agencies will be directed firmly on their administrative pathways. At the same time, however, these principles should be seen as too general to create specific legal requirements for individuals acting in Antarctica in absence of some process or duty otherwise imposed by the legislation. The Committee's first recommendation is:

(1) As a guiding principle, implementing legislation and regulations should provide a process based on appropriate substantive requirements, such as those in Article 3 of the Environmental Protocol, rather than a prescription for meeting the requirements of the Protocol. The process should be balanced so as to provide flexibility as well as clarity for meeting requirements.

An important international entity established by the Protocol is the Committee for Environmental Protection (CEP). This Committee, whose precise functions and advisory responsibilities remain to be established, would be composed of members from all nations adhering to the Antarctic Treaty. In view of the significant role that this body will play in antarctic matters, the Committee's second recommendation is:

(2) The United States should encourage the CEP to establish a formal science advisory structure for itself, which would include representatives of all interested parties. The nation should select a representative to the CEP who has both technical and policy credentials, and should establish a national process for providing scientific and environmental advice to the CEP representative.

Monitoring of environmental parameters is certain to increase as a result of implementation of the Protocol. This prospect has raised concerns that not enough attention has yet been paid to the pitfalls inherent in designing effective monitoring programs. Monitoring activities can be too narrow in scope or (and perhaps worse) too broad and misdirected. Such failings are often caused in large part by lack of a sound scientific basis for program design, or a clear focus on important governance issues or both. Therefore, the Committee's third recommendation is:

(3) Monitoring activities–both those under way and additional ones that will be needed to comply fully with the Protocol–should be directed to answer important national and international governance questions, and designed and conducted on the basis of sound scientific information with independent merit review.

Antarctic research is relatively resource-intensive because of the required logistic support (e.g., ships, planes, personnel). Implementation of the Protocol will inevitably bring additional costs for remediation, monitoring, and meeting new requirements for

environmental protection that may require more logistic support. The Committee's fourth recommendation is:

(4) Where more efficient operational modes can be identified, they should be implemented quickly and the savings applied to the conduct of science and to meeting the needs of the Protocol.

The management of antarctic science and environmental matters has crucial long-term implications for both stewardship and the conduct of research on and around the continent. The assignment of responsibilities for carrying out the new requirements is of great importance as legislation is considered that will guide the United States in implementing the Protocol. The Committee believes that the National Science Foundation should be kept at the center of antarctic science and its specific governance, while taking greater advantage of the expertise of other agencies and sharing the burden of overall program management. At the same time, the Committee proposes a process that would subject the major logistical and operational functions of the antarctic program to greater scrutiny. This process should help to ensure that decisions on the national commitment and presence that major operational facilities represent will receive the appropriate level of review and oversight. To enhance both science and stewardship of U.S. activities in the Antarctic, the Committee makes the following recommendations:

(5a) The existing management relationship between the National Science

Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects and their approval, funding, and oversight, should remain intact, modified only as new scientific and environmental requirements might suggest.

(5b) The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant technical expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.

(5c) Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National Science Foundation for a wastewater treatment facility and would conduct periodic inspections.

(5d) A special group should be established to provide general oversight and review of:

- *proposals on the concept, location, design, etc., of major U.S.*

facilities, or significant alterations to existing facilities in Antarctica;

- *environmental monitoring activities; and*
- *National Science Foundation program actions to ensure compliance by U.S. personnel (i.e., scientists and others supported by the government) as required by the Protocol and implementing legislation.*

Because of a number of factors, including the proposal preparation, submission, and review process and the limited time window for access to the continent, the path for conducting research in Antarctica is long. The Protocol specifies that only those projects requiring a Comprehensive Environmental Evaluation (CEE) must be communicated to the Antarctic Treaty Consultative Parties for consideration at the next Antarctic Treaty Consultative Meeting. For those projects determined to have only a minor or transitory impact (i.e., those projects requiring an Initial Environmental Evaluation (IEE)). If the implementing regulations do not provide the flexibility to allow for changes in methods and equipment after initial proposals are submitted, it might not be possible to take advantage of recent technological advances. Therefore, the Committee's sixth recommendation is:

(6) Legislation implementing the Protocol should not impose additional delays in the approval of scientific projects determined to have no more than a minor or transitory impact on the antarctic environment.

From the beginning of the Antarctic Treaty System, transparency (i.e., the openness of the process to the public and other interested parties) has been an important component of the system's governance. The Committee, therefore, recommends:

(7) Legislation implementing the Protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.

A major challenge for science and for stewardship in the Antarctic as the Protocol is enacted and enabled by the Treaty Parties is to obtain a baseline assessment of the present state of environmental affairs throughout the global region above 60 degrees south latitude. Therefore, the Committee recommends:

(8) The U.S. representative to the Committee for Environmental Protection (CEP) should encourage the CEP to organize and undertake periodically an international scientific assessment of the state of scientific understanding of environmental problems and challenges in the Antarctic.

The Committee did not make specific recommendations with regard to the issue of individual investigator liability and citizens' suits which has been raised in the Senate, House, and Administration bills. This was purposely done in recognition that the Antarctic

Treaty Consultative Parties are developing an additional annex on liability. The potential exposure of the individual scientific investigator and supporting research institution to punitive sanctions could have a chilling effect on the creative conduct of science; liability is particularly difficult to integrate into the harsh and unique setting of science in Antarctica. The Committee believes therefore, that in developing the Annex, the Parties should seek input from the scientific community in order to minimize the potential adverse impacts of liability on the conduct of science. Since U.S. legislation must ultimately be consistent with any international liability regime, the Committee suggests, and the Polar Research Board firmly believes, that the Congress may wish to defer addressing the issue of liability in implementing legislation until this international framework has been more clearly established and the negotiation of the annex has been completed.

In discussing the citizen suit and liability issues, the Committee recognized access to the Antarctic is limited to narrow windows of time during the austral summer--two to four months depending on the station. Additional requirements imposed by implementing legislation could create delays that compromise the quality or the carrying out of some research projects. Delays of even a few weeks or months could result in actual delays of up to one year in research projects. Such delays might compromise scientists' abilities to respond quickly to unanticipated natural events.

The Committee is particularly concerned that delays or restrictions in the conduct of science and its logistics would adversely affect the very scientific research that

is now largely directed at protecting and understanding the earth's environment.

The Committee's report, Science and Stewardship in the Antarctic, contains detailed discussions of the foundations for each of the above recommendations and conclusions. To summarize, the Committee strongly believes that the implementation of the Protocol will be of benefit to antarctic science as well as the antarctic environment. In the Committee's view, science and environmental stewardship on the continent are linked hand-in-hand. The Committee hopes the expeditious adoption of implementing legislation in the United States and ratification of the Protocol by the Executive Branch will help foster this relationship internationally. On behalf of the Committee on Antarctic Policy and Science and the National Research Council's Polar Research Board, I thank the House Committee on Foreign Affairs, Subcommittee on Economic Policy, Trade and Environment, and the Committee on Merchant Marine and Fisheries for the invitation to appear here today.

THE ANTARCTICA PROJECT

STATEMENT OF THE ANTARCTICA PROJECT,
GREENPEACE, FRIENDS OF THE EARTH-U.S.,
THE HUMANE SOCIETY OF THE UNITED STATES,
NATIONAL WILDLIFE FEDERATION, and
SIERRA CLUB

before the

SUBCOMMITTEE ON ECONOMIC POLICY, TRADE AND THE ENVIRONMENT

of the COMMITTEE ON MERCHANT MARINE AND FISHERIES

and the

COMMITTEE ON FOREIGN AFFAIRS

of the

HOUSE OF REPRESENTATIVES

on

IMPLEMENTING LEGISLATION FOR THE
PROTOCOL TO THE ANTARCTIC TREATY ON ENVIRONMENTAL PROTECTION

Presented by Beth Claudia Marks
Director, The Antarctica Project

November 16, 1993

page

Thank you for the opportunity to testify today on implementing legislation for the Protocol to the Antarctic Treaty on Environmental Protection. I am Beth Claudia Marks, Director of The Antarctica Project. This statement is presented jointly with Greenpeace and Friends of the Earth-U.S, and on behalf of The Humane Society of the United States, National Wildlife Federation, and the Sierra Club, and urges your Committees to take prompt action to enact strong implementing legislation for the Antarctic Environmental Protocol and its five Annexes. This Protocol is vital to U.S. interests in Antarctica, and is, for the most part, consistent with the Antarctic Protection Act of 1990, which most recently elucidated U.S. policy in the region. The Protocol advances basic U.S. goals of protecting the Antarctic environment, while preserving the unique opportunities the region offers for scientific research of global significance.

As you know, the Senate gave its advice and consent to ratification on October 7 of last year, but implementing legislation is needed to complete the ratification process. Timely implementation of the Protocol will help safeguard Antarctica's status as a global wilderness area and scientific laboratory. Until it is ratified and enters into force, all activity will be guided by mostly outdated, and in many cases, voluntary, recommendations which do not provide for comprehensive protection for the environment.

We appreciate your Committees holding this hearing to discuss the pressing issue of domestic implementing legislation for this critical environmental agreement. We would like to thank Chairman Studds for his leadership, over the past several years, in identifying the issues that need to be addressed in implementing legislation, and for moving the implementation process forward by introducing H.R. 1066, "The Antarctic Environmental Protocol Act" (which was originally introduced as H.R. 5459, the "Antarctic Environmental Protection Protocol Act of 1992"). We are, however, disappointed with the Administration's proposal, which takes a minimalist approach to implementing the Protocol, and misses the opportunity to enact a model statute to enhance protection of the Antarctic environment.

I. Introduction

The Antarctica Project, Greenpeace, Friends of the Earth and other ASOC members around the world joined forces in the early 1980s with a common goal of providing Antarctica's near-pristine environment with longlasting and comprehensive protection as a "World Park," in which human activities are tightly regulated to minimize impacts on Antarctica's fragile environment. Under the auspices of the Antarctic and Southern Ocean Coalition--a coalition of 200 organizations worldwide (including 26 in the U.S.) which share this goal--the campaign focussed its efforts on defeating the

Convention on the Regulation of Antarctic Mineral Resource Activities (CRAMRA), and replacing that agreement with a comprehensive environmental protection regime, including a permanent prohibition on commercial mineral resource activities in Antarctica.

Along with the environmental threats posed by opening Antarctica to mining, our organizations have concentrated their attention on the over-harvesting of the region's marine living resources, the protection of Antarctic wildlife and wilderness, environmental impacts from scientific stations--primarily related to waste disposal activities, and the overall need to make environmental protection a top priority within the Antarctic Treaty System.

In support of these efforts, Greenpeace has carried out eight annual expeditions to Antarctica, beginning in 1985, to observe and document the impacts of human activities in the region, including fisheries operations, tourist activities and the activities of the national Antarctic stations. In addition, from 1987 until 1992, Greenpeace operated the only year-round, non-governmental base in Antarctica. Reports from these expeditions highlighted observed environmental problems, and heightened the public's awareness that only a public outcry could forestall a major environmental crisis in the Antarctic.

Antarctica is a continent larger than the U.S. and Mexico combined, and is owned by no one. It is governed by the Antarctic Treaty System, a collection of international treaties and recommendations which articulate policies and permitted activities in the Antarctic region. Forty nations have agreed to abide by the Antarctic Treaty System. These international agreements provide the framework for conserving the Antarctic environment, but they are largely meaningless unless effective implementing legislation is enacted by participant countries, reflecting a lasting national commitment.

The protection of Antarctica is not just an esoteric environmental issue. Antarctica represents 10% of the earth's land mass. Because of Antarctica's central role in regulating global environmental processes, impacts there could adversely affect the world's atmospheric and oceanic systems, including global tides and sea levels. Disruption of these systems could well influence the health of our coasts and seas, impacting maritime and fisheries industries, not to mention the overwhelming proportion of Americans and citizens of other nations who live on or near a coast. The nearly pristine nature of the region provides a platform for research that is crucial to the understanding and monitoring of global change phenomena, including global warming, ozone depletion, and atmospheric pollution. The protection of Antarctica, therefore, is important for the citizens of the world.

Because the U.S. has the largest presence in the Antarctic, many of the problems posed by a large human presence are a direct result of U.S. involvement. Passage of strong implementing legislation will demonstrate that the United States is meeting its legal obligation to be a better steward and to be more accountable for its activities. It will also demonstrate the United States' commitment to protecting the biological diversity and wilderness attributes of the Antarctic, while preserving its values as an area for the conduct of cooperative research, for peace and inspiration.

II. Overview of the Protocol

The adoption and signing in 1991 of the Protocol represents a very significant milestone in our campaign for a World Park. The Protocol designates Antarctica as a "natural reserve, devoted to peace and science," and is an effort to rationalize, strengthen, and make comprehensive and binding the Antarctic Treaty's environmental Recommendations.

The Protocol bans all mineral resource activities in the Antarctic region for at least 50 years, establishes a set of guiding environmental principles, a Committee on Environmental Protection to advise the Antarctic Treaty Parties on issues related to the environment, and establishes mandatory dispute settlement procedures. In practice, the minerals ban provision is unlimited in duration, in the sense that it does not expire on a certain date.

The Protocol is based on the assertion that the protection of the Antarctic environment, its dependent and associated ecosystems, and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, should be a fundamental consideration in the planning and conduct of all approved activities within the Treaty area. Activities must be planned so as to limit adverse impacts on the environment and on the basis of prior assessment of possible impacts. This is a major advance in international law and management of what is essentially a global commons.

Specific regulations are provided in five Annexes: on Environmental Impact Assessment (EIA), Conservation of Antarctic Fauna and Flora, Waste Disposal and Management, Prevention of Marine Pollution, and Protected Areas. The latter was negotiated at the Bonn XVI Antarctic Treaty Consultative Meeting after the conclusion of the Protocol negotiations.

The Protocol on Environmental Protection to the Antarctic Treaty was concluded at the Fourth Session of the XIth Antarctic Treaty Special Consultative Meeting which was held on October 3-4, 1991 in Madrid, Spain.

Negotiations were initiated after Australia and France rejected the Minerals Convention, and called instead for negotiation of a regime to ensure comprehensive environmental protection of the Antarctic region. In response to this initiative, the XV Antarctic Treaty Consultative Meeting adopted Recommendation XV-1, which established the Special Consultative Meeting to discuss all proposals relating to the comprehensive environmental protection of Antarctica and its dependent and associated ecosystems.

The Protocol was negotiated in less than 12 months. This is a commendable record of accomplishment. It has been signed by all 26 Antarctic Treaty Consultative Parties, and by 8 Non-Consultative Parties, and will enter into force after the ratification, acceptance, approval or accession by all of the current 26 Consultative Parties.

While the Protocol (with Annexes) has taken Antarctic environmental protection to a new and important level, the Protocol is not a flawless agreement. It contains many loopholes, particularly in the Annexes, and condones some environmentally unsafe practices, such as incineration and waste disposal with minimum controls. Some considerable gaps also exist, including the lack of a liability regime for environmental damage and an institutional inspection authority to monitor for compliance with the Protocol's measures. (These are discussed in Annex 1.) The ability to review and potentially lift the mining prohibition after 50 years is also cause for considerable concern. **We urge that the U.S. take a leadership role within the Antarctic Treaty System in moving to fill these gaps.**

As noted above, the Protocol includes an Article that prohibits all activities relating to mineral resources (Article 7). For the first 50 years from the time the Protocol enters into force, the prohibition can be lifted only by a consensus of all ATCPs. After 50 years, the prohibition may be lifted if adopted by a majority of all Antarctic Treaty Consultative Parties (ATCPs), including 3/4 of current ATCPs, and then ratified by 3/4 of ATCPs including all 26 current ATCPs (i.e., those which negotiated the Protocol). However, pursuant to a U.S. proposal, any nation has the right to withdraw from the provisions of the Treaty (and thus presumably to mine without regulation) if an amendment lifting the ban is enacted but not ratified within 5 years.

In our view, this is a provision that is inconsistent with the Antarctic Protection Act of 1990. From the perspective of U.S. law, the minerals ban is indefinite. We are pleased that the language of H.R. 1066 is consistent with this ban.

III. Ratification

In spite of the Protocol's imperfections, swift ratification of the Protocol is of paramount importance. Until it is ratified and enters into force, all activity will be guided by mostly outdated, and in many cases, voluntary, recommendations which do not provide for comprehensive protection for the environment. Minerals activities will continue to be regulated by a voluntary agreement to refrain from pursuing such activities.

The United States must use the ratification procedure, especially the enactment of implementing legislation, to demonstrate leadership on the Protocol. By swiftly moving forward with ratification, and by passing strong, comprehensive legislation, the United States will set a positive example for other Antarctic Treaty Parties to follow.

Of the 26 Consultative Parties needed to ratify the Protocol, six--Spain, France, Ecuador, Peru, Norway and most recently, Argentina--have already ratified, but none has passed domestic implementing legislation. Several other nations are proceeding through their domestic processes. Ratification by the U.S. will provide momentum to ratify by other nations. It has already been over two years since nations signed the Protocol. If we allow much more time to elapse, the U.S. will lose the opportunity to lead by example. Our organizations would like to see the United States complete ratification in time for the next Antarctic Treaty Consultative Meeting in Kyoto, Japan in April of 1994.

IV. Domestic Implementing Legislation

A. Overview

In spite of our keen interest in ratifying the Protocol expeditiously, timely ratification should not be at the expense of sound, comprehensive legislation. As stated above, our organizations believe that the United States should seize the opportunity of implementing legislation to enact a model statue which enhances the protection of the Antarctic environment, while preserving the unique opportunities the region offers for international cooperation on globally significant scientific research. Leadership on the part of the United States in this regard will encourage other Parties to adopt strong domestic measures.

In this context, the U.S. should approach legislation not from the perspective of doing the minimum necessary to complete ratification, but instead from the standpoint of building on the Protocol, to make the agreement a more effective tool for the protection of the Antarctic environment from the activities of U.S. citizens there. The Protocol, and its Annexes, should be viewed as

minimum standards to be augmented and strengthened. The standards contained in U.S. implementing legislation should be at least as stringent as the standards of existing domestic environmental laws. U.S. laws should provide a model and a baseline.

Implementing legislation should shape the roles and responsibilities of agencies and departments in such a way that takes advantage of the expertise of those agencies, ensures full compliance with the Protocol, and provides for meaningful oversight and enforcement of U.S. activities in the region, including the U.S. Antarctic Program. Given the remoteness of Antarctica, it is crucial that the regulatory structure established is transparent and facilitates public participation in the protection and governance of the region.

B. Agency Responsibility

Past stewardship of the Antarctic environment has been inadequate, and considerable environmental impact has resulted. When we testified before the House Committee on Merchant Marine and Fisheries last June, our organizations urged that responsibility for implementing and enforcing the Protocol should be distinct from the principal operational duties of running the U.S. research program in the Antarctic. The National Science Foundation (NSF), which has both of these responsibilities, had not demonstrated its ability to oversee itself and support the program. This agreed with H.R. 1066, introduced by Chairman Studds, to implement the Protocol.

We realize, however, that the NSF has made significant strides in improving its waste disposal and recycling operations, and upgrading its fuel-handling capabilities and storage facilities. NSF's waste regulations, issued on June 29, 1993, bring it into compliance with the Antarctic Conservation Act of 1978 by mandating waste handling procedures and promulgating rules to designate, and control the release of, pollutants in the Antarctic. In addition, the recent statement by the new Director of the Office of Polar Programs that incineration will no longer be the preferred action in the Antarctic, gives us hope that the NSF is committed to sound environmental management in the future.

Therefore, we agree with the Administration's proposed implementing legislation that the National Science Foundation should continue to be the agency in charge of the United States Antarctic Program, with legal responsibility for the activities of scientists who it is supporting and for its own acts and omissions.

However, this must be conditioned on there being legally enforceable provisions in place to ensure that past environmental abuses will not occur in the future. In this context, other agencies with pertinent expertise, such as EPA, NOAA, the Coast Guard, and the Marine Mammal Commission, must be fully involved in

the development of regulations and oversight of the U.S. Antarctic Program. NSF should be required to consult with other agencies in fulfilling its obligations under the Protocol, rather than operating in a vacuum, as in the past, and to obtain their formal concurrence at key points in the regulatory process.

In this context, we note that one of the recommendations of the National Academy's Committee on Antarctic Policy and Science is that "decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, EPA would grant a permit to NSF for a wastewater treatment facility and would conduct periodic inspections."[1]

We remain concerned that if the issue of NSF's self-regulation and self-enforcement on environmental matters is not addressed, and if the expertise of agencies with natural resource conservation and environmental protection is not brought to bear in the Antarctic, NSF's progress will erode, and environmental problems will continue. There are many examples that demonstrate that self-regulation has not been effective in ensuring environmentally sound performance.

1. Permitting

We disagree with the Administration's proposal, in Section 5, which allows NSF to self-permit and self-enforce activities having to do with waste disposal, including incineration and sewage treatment. The Administration's proposal requires consultation between NSF and EPA; NSF is then free to self-permit and self-regulate. On this point, we agree with the division of responsibilities articulated in H.R. 1066 (Section 6), which puts EPA in charge of activities having to do with waste disposal.

EPA or the agency with responsibility for the National Environmental Policy Act (NEPA) should review all environmental assessments, concur on the decision to conduct an environmental assessment, as well as concur on the level of assessment required. H.R. 1066 articulates this responsibility; the Administration proposal allows for consultation only between NSF and EPA.

H.R. 1066 maintains a strong, lead role for NSF by leaving it in charge of the research program, while giving Commerce (NOAA) the responsibility for permitting logistics, takings and harmful interference, tourist activities, and entry into protected areas. The Administration's proposal allows for NSF and Commerce to concur

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[1]Committee on Antarctic Policy and Science, Polar Research Board, National Academy of Sciences, *Science and Stewardship in the Antarctic*, National Academy Press, 1993, p.4.

on permits for takings only as the consequence of logistics. NSF is allowed to self-permit for takings as the consequence of science, with no mandate to consult or concur with any agency. We are not opposed to takings as a matter of principle, but we want to ensure that consideration is first given to all possible alternatives.

In this context, NSF and Commerce should concur on takings of and harmful interference with native flora and fauna (including specially protected species) both as a consequence of scientific activities and of logistics, entry into protected areas, and the introduction of non-native species for non-scientific purposes. Additionally, EPA and NSF should concur on all activities having to do with waste disposal and environmental impact assessments (EIAs), including permitting, oversight, and enforcement.

Concurrence of NSF and the appropriate agency would allow NSF to maintain the overall coordination of the permitting process. This has merit, as it may facilitate permitting for individual scientists. However, since NSF, or contractors working directly for NSF, will continue to be regular permitees, it only makes sense to require concurrence in determining terms and conditions of permits, as well as in making decisions to modify, suspend or revoke permits.

2. Regulations

Section 6 of the Administration's proposal provides general authority to prescribe regulations to implement the legislation to the Director of NSF, the Secretary of Commerce, the Administrator of EPA, the Secretary of the department in which the Coast Guard is operating and the Secretary of State.

However, the Administration's proposal would leave NSF in charge of prescribing regulations which designate native species, specially protected species, and non-native species that may be introduced into the Antarctic, which specify actions to protect native species, and which identify Antarctic protected areas. H.R. 1066 places this regulatory authority with Commerce. For the reasons stated above, we believe that concurrence between Commerce and NSF is necessary.

Residual regulatory authority is granted to NSF to allow the promulgation of stricter regulations than foreseen or allowed by the Protocol. While this is a commendable feature, there is no mechanism to compel NSF to issue additional regulations.

We are concerned with the length of time allowed for the promulgation of regulations: NSF is given two years to promulgate regulations which designate native species, specially protected species, and non-native species that may be introduced into the Antarctic, which specify actions to protect native species, and

which identify Antarctic protected areas; we believe that one year should be sufficient, especially since the requirements mirror the requirements of the Antarctic Conservation Act, which NSF was responsible for implementing.

We are pleased that the Administration's proposal provides for NSF and EPA to concur on the promulgation of regulations which designate prohibited products, prohibited waste and their disposal, and on a waste disposal classification system, waste management plans, and clean up of past/present waste disposal sites. However, we believe that these should be promulgated more rapidly than the three years which is allowed.

The Secretary of State is charged with promulgating regulations pertaining to the filing of advance notifications of expeditions to and within Antarctica, including a requirement for articulating compliance with contingency planning and response action. We do not see the necessity for allowing two years for the promulgation of these regulations.

Although we agree with both the Administration's proposal and H.R. 1066 that Commerce should continue to be responsible for writing regulations regarding mineral resource activities, as mandated by the Antarctic Protection Act of 1990, the length of time for promulgating these regulations is not specified. Congress should specify one year.

We are also in agreement with both bills that the Coast Guard should be responsible for enforcement of the Marine Pollution Annex, as well as emergency response.

C. NEPA

With respect to NEPA, we are in complete agreement with the decision of the United Sates Court of Appeals for the District of Columbia Circuit, in *Environmental Defense Fund, Inc.* v. *Walter E. Massey, Director, National Science Foundation.* The impact of all U.S. activities on the Antarctic environment must be assessed prior to their occurrence. NEPA will be a strong vehicle for ensuring greater transparency and accountability, and greater cooperation among agencies.

Prior to the commencement of an activity, there needs to be documentation that all reasonable and practical alternatives were considered. Compliance with the NEPA process will ensure that this occurs, and that the environment is truly taken into account when an activity is planned. In those cases where an activity is allowed to proceed despite the finding of an environmental impact, documentation must include the finding that no reasonable alternative existed. There must be agency and public review of this documentation, including a sufficient comment period. Given the short Antarctic season, these reviews should be concurrent.

Our organizations are very concerned by the loophole which the Administration proposal creates to avoid compliance with NEPA. The Administration proposal would exempt "Antarctic joint activities" from the EIA process. An Antarctic joint activity is defined [Section 7(b)] as "any federal activity in Antarctica which is proposed to be conducted, or which is conducted, jointly or in cooperation with one or more foreign governments, as defined in regulations promulgated by such agencies as the President may designate."

Given the cooperative nature of Antarctic research, and the large number of joint activities the U.S. has entered into in the past and will likely enter into in the future, this is a very great concern. Because of past U.S. leadership on and experience in environmental issues, many nations look to the U.S. to take the lead in environmental assessments. If the U.S. shirks this responsibility, or defers to another nation to undertake the environmental assessment procedure, there is a real concern that the assessment will not be prepared, or prepared properly. This will set a bad example for other nations, who might model their domestic legislation on the U.S. legislation. An additional concern is that these decisions are not subject to judicial review. Our organizations urge your Committees to delete this requirement from the final legislation which will implement the Protocol.

There must also be no exemption for permitting decisions from the environmental impact evaluations related to permits. Although it is worded in a somewhat circuitous way, and seems inconsistent with other portions of their draft on its face, the Administration's draft bill, in Section 7(i) appears to provide a blanket exemption for "permitting decisions under Section 5."

D. Oversight and Enforcement

Our organizations believe that implementing legislation must include provisions for citizen suits. This would be consistent with every major environmental law passed in the U.S. in the last 20 years, including the Clean Water Act, the Clean Air Act, the Resource Conservation and Recovery Act (RCRA), and the Comprehensive Environmental Response, Compensation and Liability Act ("Superfund"). The inclusion of citizen enforcement suits is also consistent with President Clinton's statements during his presidential campaign. We urge that the specific language utilized in these other major pieces of legislation be followed for the Antarctic. These have proven to be wise additions to our justice system. It is essential that similar provisions be available regarding the 10% of the Earth covered by this legislation.

The Administration's proposal does not create any mechanism to ensure that NSF or other agencies properly implement and enforce the requirements of the Protocol and domestic implementing legislation. A broad citizen suit provision would help provide

such a mechanism. To be effective, however, citizen suit authority must not only address alleged breaches of prohibited activities identified in H.R. 1066 and the Administration's proposal, but must also address failures by any person to take necessary measures to ensure the effective protection of the unique Antarctic region.

Given the unique juridical circumstances of Antarctica and the huge U.S. presence in the region, the U.S. public needs a role in helping to ensure that the rules for protection of Antarctica are followed. The Supreme Court has made crystal clear in recent decisions that Congress must be very specific in crafting a role for the public.

Our specific recommendations include:

o **Standing should be as broad as possible**, to ensure that U.S. citizens and public interest groups that have dedicated significant resources to the protection of the Antarctic have the right to file an action.

o **The ability to challenge permit decisions must be incorporated in implementing legislation.** When a citizen has participated in the permit process, but has good reason to believe that the permit issued is inconsistent with the legislation, regulations issued thereunder, the Antarctic Protection Act or the Protocol, that party should have the statutory right to challenge such a decision in court. Such authority is beneficial to the government, as it will help ensure that government actions do comply with legal requirements, as expressed by the Congress or the agency which has promulgated the relevant regulations.

o **The venue in which citizens can file a case should be** expanded to include either the district in which the citizen resides or the District of Columbia.

o **Citizens should be allowed, as a matter of right, to** intervene in actions brought by the government.

o **Penalties that can be obtained in citizen suits should be** increased, and legal fees should be based on the market-rate principle, which has proven so important in many other statutory contexts.

o **The bill should provide for a reward to any person who** reports a violation to appropriate government authorities, where such notification leads to successful prosecution, settlement or the imposition of penalties on the offender.

The Administration's proposal also does not provide other agencies with authority to take enforcement actions against those who violate the legislation, nor do they have authority to modify or suspend a permit. This is of great concern when it comes to an

agency which has issued itself a permit (such as NSF), as the agency would most likely refrain from bringing an enforcement action against itself for violating the permit. The absence of a provision for agencies bringing enforcement actions against another agency is inconsistent with the Federal Facilities Compliance Act, which authorizes EPA to enforce certain environmental laws against other federal agencies.

We are pleased that the Administration's proposal establishes a system of inspection of U.S. Antarctic bases every two to five years. We are concerned, however, that there is no mechanism for ensuring that NSF respond to or correct any observed violations, whether by another agency, Congress or the public. **We therefore urge that your Committees add such a mechanism, which could include (1) a requirement that NSF publicize its response action to reported violations, along with justification for its action or inaction, and (2) a role for the public through the citizen suit provisions.**

In this overall context, we wish to inform the Committees that the one existing mechanism for soliciting public input and involvement in Antarctic policy making, the State Department's Antarctic Advisory Committee, which was set up in 1978 and has been a very useful forum, was recently disbanded by the Administration. Attached for the record is a letter to Vice-President Gore on this subject, which is a matter of significant concern to the environmental community.

E. Waste Disposal

As noted above, our organizations believe that EPA should be given overall responsibility for the implementation of Annex III on Waste Management and Disposal. Clearly, among federal departments, EPA has the greatest expertise in this area. NSF's waste management practices have been very controversial, and have contributed significantly to environmental problems at U.S. Antarctic stations. We recommend that EPA be granted the authority to not only implement Annex III, but to improve and build on it, rather than be constrained by it.

In the context of waste disposal, our organizations submit that the Protocol and its Annexes must be used as a baseline for regulations, with the ability to build on the Annexes in the particular context of U.S. law and experience.

In so far as the Annexes allow activities which in the U.S. would compromise the environment, we submit that U.S. implementing legislation should allow for the Annexes to be strengthened. I am referring specifically to incineration and waste disposal procedures. In the first case, we do not believe that incineration and open burning are compatible with the Antarctic environment, despite being permitted activities in the Antarctic (open burning

will not be allowed in the Antarctic after the 1998/99 season). In the second case, we believe that maceration of wastes discharged into the sea is not sufficient for a station as large as the U.S. base at McMurdo, although again this is permitted by the Protocol.

We applaud H.R. 1066's immediate ban on open burning, and on the operation of landfills at coastal stations. We submit that incineration should be immediately banned as well. It is unfortunate that the Administration's proposal allows incineration in the Antarctic, especially since NSF itself, following the preparation of an EIA pursuant to NEPA, stated that "incineration is no longer the proposed action."[2] This same statement also mentioned that NSF ceased open burning of solid wastes in 1991. It would appear, therefore, that there should be no opposition to legally banning both of these activities in the implementing legislation.

We submit that implementing legislation should include the requirement that discharges into the sea should meet the same secondary treatment standards as those applicable to the navigable waters of the U.S. For years our organizations have been warning the NSF and Congress about the environmental dangers posed by the dumping of untreated sewage and domestic wastewater into the coastal waters of Antarctica.

There are a number of provisions that our organizations believe should be incorporated into implementing legislation, including:

- o a commitment to clean up past and present waste disposal sites, including coastal sites;
- o a restriction on the use of leaded fuels (prohibited in H.R. 1066) or fuels containing ethylene bromide or ethylene chloride
- o a commitment by the U.S. Antarctic Program to a system of retrograding all solid (combustible and non-combustible) waste from Antarctica.

It should be noted that NSF practices already conform with many of these suggestions. As noted above, NSF has indefinitely suspended open burning of wastes at its stations; has terminated its landfill operation at McMurdo station, and has phased out the use of most leaded fuels. All of these practices are hazardous to the environment, and many have already had a lasting impact on the area around McMurdo. NSF has also substantially increased the quantity of wastes and materials that it retrogrades each year. Nevertheless, we believe that it is important to codify these additional measures in statute to ensure that the U.S. program does

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[2]Statement by Dr. Neal Sullivan, Director, Office of Polar Programs, June 14, 1993.

not return to these practices at a later date.

Beyond the specific measures highlighted above, the EPA should also be charged with developing a comprehensive plan along the lines of the one anticipated in the ACA to "prevent or control the discharge or other disposal of pollutants, from any source in Antarctica." This would allow the United States to fill any gaps that exist in the Protocol's waste annex, or cover activities that were not anticipated when the Protocol was negotiated, such as the detonation of wastes for so-called disposal purposes.

F. Environmental Principles

Article 3 of the Protocol sets forth a series of environmental principles, which "shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area." As an integral and legally-binding element of the Protocol, the principles are expected to guide and shape environmental planning and decision-making for all activities in Antarctica, and act as a safety net to reach potentially harmful activities that are not covered explicitly by the Annexes. Our organizations submit that these principles constitute a binding set of obligations for governments, and should be treated as an integral part of the regulatory framework that guides all actions in the Antarctic. Thus, they must be taken into account in implementing the Protocol.

It is conceivable that some activities, while falling within the letter of the annexes, could violate the Protocol's environmental principles, especially over time, and that modifications to or cancellations of activities would be warranted. In fact, the principles themselves require that activities "be modified, suspended or canceled if they result in or threaten to result in impacts upon the Antarctic environment or dependent or associated ecosystems inconsistent with those principles."

Under H.R.1066 it is unlawful to conduct an activity or attempt to commit an act which is inconsistent with the Protocol [Section 5(a)(1)], including activities which require a permit. The criteria for the terms and conditions of a permit also mandate consistency with the Protocol, including Article 3, as articulated in Section 6(b).

The Administration's proposal, on the other hand, by including the Article 3 environmental principles in the statement of U.S. policy rather than in the body of the legislation, fails to implement the environmental principles. We submit that implementing legislation must make it unlawful for an activity to be conducted inconsistent with the principles of Article 3.

During hearings on implementing legislation last year, concern was expressed that if too many regulations were imposed, it would

limit the ability of individual scientists to conduct science during the short Antarctic season. Further, there was concern that if an individual scientist was liable for a permit infraction, then they would be less willing to embark on research in the Antarctic.

We submit that implementing legislation should articulate that once a permit is issued for "activities regulated by an annex" consistent with the Protocol, those activities should be considered in compliance with the Protocol's environmental principles. This is directly linked to the requirement in Section 6(i)(1)(A) of H.R 1066, and Section 5(e) of the Administration's proposal, to modify, suspend or revoke a permit which becomes inconsistent with the Protocol, including the principles, due to "a change in conditions."

Together, these provisions will protect the individual scientist or visitor from unknowingly breaching the principles, while carrying out a permitted activity. However, they do not--and should not--shield an agency or agencies from the responsibility for ensuring long-term consistency of all activities with Article 3.

Section 8 of both H.R. 1066 and the Administration's proposal provide for the development of a plan for the monitoring of activities which have more than a minor or transitory impact, to evaluate their impact over time on the environment. These monitoring programs should help in the decisions to modify, suspend or revoke a permit, particularly as these decisions relate to consistency with the environmental principles. A change in conditions could include a change in environmental conditions, an unpredicted impact from isolated or ongoing activities, or a change related to the cumulative impacts of an activity or activities.

In this context, we encourage your Committees to include in implementing legislation recommendations about programs currently in place which could facilitate the U.S.' monitoring efforts. In particular, we would remind your Committees that NOAA is responsible for the Antarctic Marine Living Resources Program.

The Antarctic Marine Living Resources Program (AMLR), run by NOAA's National Marine Fisheries Service (NMFS), supports the U.S.'s international obligation to the Antarctic fisheries convention, the Convention on the Conservation of Antarctic Marine Living Resources. The research conducted under the auspices of AMLR contributes to our knowledge about global climate change and impacts from ozone depletion, and produces the data necessary for helping to understand the impacts of Southern Ocean fisheries on predators and prey. Research results generated in the 10 years since AMLR's inception can contribute to the baseline data necessary for deciding if planned activities should go forward.

G. Tourism and Other Non-Governmental Activities

Our organizations submit that the Protocol was drafted explicitly to apply to all activities in Antarctica, both governmental and non-governmental. The agreement does not distinguish between types of Antarctic operators, but instead establishes a system whereby the acceptability of activities is judged on the potential for them to result in environmental harm. There are no special provisions at this time which single out one group. Our organizations strongly support this approach, and consequently oppose the negotiation of a separate annex to the Protocol on tourism and non-governmental activities.

There are, however, certain kinds of tourist activities that do not share the same characteristics as governmental operations. These activities involve repeated visits by large numbers of visitors to wildlife and wilderness sites. To date, this type of activity appears to be unique to large-scale, ship-based tourism. Our organizations can see a need to enact a set of measures to regulate these activities. However, these measures would need to be followed by all visitors (including scientists and support staff), not just tourists.

Given our perspective that environmental measures should not vary based on the nature of the operator, we believe that if implementing legislation is going to require permits for non-governmental expeditions to Antarctica, the same should be required of governmental expeditions. This would be compatible with the intent of the Protocol.

Section 12 of the Administration's proposal directs the "Department of State to coordinate an interagency study of tourism in Antarctica to determine whether or not additional measures should be taken with respect to Antarctic tourist activities." We submit that this study should determine which, not whether, additional regulations are needed for all visitors. We further submit that two years is too long to wait for the promulgation of additional regulations. This is especially true as the tourist industry itself supports additional regulations to minimize impacts from tourists on the environment of Antarctica.[3] Based on the dramatic escalation of visitors to the Antarctic, we believe that additional regulations should be promulgated as quickly as possible.

H. Implementing Legislation and the Antarctic Conservation Act

Our organizations submit that implementing legislation should

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[3]Statement of John Splettstoesser, spokesperson, International Association of Antarctic Tour Operators, before the House Committee on Merchant Marine and Fisheries, June 30, 1992.

be at least as stringent as the ACA. In particular, under the ACA permits allowing the takings of flora and fauna could only be issued for "the purpose of providing specimens for scientific study or scientific information, or for museums, zoological gardens, or other educational or cultural institutions or uses" and only if "there is a compelling scientific purpose for such taking."

The Administration's draft legislation, Section 5(c)(3)(A) weakens this standard by allowing takings "in connection with avoidable consequences of the construction or operation of scientific support facilities." H.R. 1066 only specifies, in Section 5(a)(8)(A), that takings would be permitted providing that the local distribution and abundance were not significantly affected.

Therefore, our organizations submit that the language of implementing legislation should not be weaker than existing law.

I. Marine Pollution

Annex IV to the Protocol addresses the need to prevent marine pollution from ships operating in Antarctic waters, and articulates rules, consistent with MARPOL 73/78, controlling the discharge of oil, noxious liquids, garbage and plastics, and sewage. However Article 11 of the Annex exempts "any warship, naval auxiliary or other ship owned and operated by a State and used, for the time being, only on government and non-commercial service." This is a very significant loophole, as most ships supporting national Antarctic programs fall under this exemption.

By expressly requiring "all ships over which the United States has jurisdiction, including all ships engaged in or supporting United States Antarctic operations" to comply with Annex IV, H.R. 1066 [Section 14(c)] places the U.S. in a leadership position, to influence the implementation of these provisions by other Parties.

We do not understand the Administration's reluctance to incorporate a similar provision, especially since this is consistent with a statement made by Mr. Tucker Scully, Director of the Office of Oceans of the State Department, at the October 20th hearing on implementing legislation before the Senate Committee on Commerce. At that time he stated that it is the Administration's understanding that "all public U.S. vessels involved in the support of the U.S. Antarctic Program will fully comply with all of the provisions of Annex IV and the provisions of the Protocol." He further stated that the Administration is "confident that all vessels to which we have reach, whether they are entitled to claims of sovereign immunity or not, will fully comply with all of the provisions of Annex IV."

We question how the Administration intends to ensure compliance without statutory regulation. Our organizations believe

that it is important to codify these additional measures in statute to ensure that all ships comply with Annex IV and the Protocol.

J. Minerals Prohibition

Article 7 of the Protocol prohibits all activities relating to mineral resource activities except for scientific research. While the Administration's proposal does prohibit commercial mineral resource activities, the definition of mineral resource activities is so broad that it could potentially create gaping loopholes. We support the definition in H.R. 1066 which is much narrower, and more in line with the intention of the Protocol.

In this regard, our organizations submit that implementing legislation must clearly state that the prohibition on Antarctic mineral resource activities should remain in effect permanently or indefinitely. This is clearly articulated in Section 17 of H.R. 1066.

V. Conclusion

The groups joining in this testimony wish to congratulate the governments for having agreed on the Protocol. We believe that the Treaty Parties' commitment to "the comprehensive protection of the Antarctic environment and its dependent and associated ecosystems" is the beginning of a new period in the evolution of the Antarctic Treaty. We and our millions of members look forward to working closely with the Treaty governments and other Observers to implement it.

The Protocol is an historic agreement that could, if ratified, implemented fully, and strengthened over time, provide longlasting protection for the Antarctic environment, and consequently, science. By enacting strong, comprehensive legislation--that takes the Protocol as a baseline for action--the United States can play an influential role in realizing the long-term potential of the Protocol.

It has been two years since the Protocol was concluded and signed in Madrid. Timely implementation and ratification of the Protocol will help safeguard Antarctica's status as a global wilderness area and scientific laboratory. We urge your Committees to vigorously pursue enactment of implementing legislation and the completion of the ratification process. We look forward to working with the Congress and the Administration in obtaining prompt passage of implementing legislation for the Protocol and its Annexes.

Annex 1--Gaps in the Protocol

1. The Need for Collective Inspections

The current Treaty inspection system is based on individual national inspections and is used primarily to determine compliance with principal Treaty obligations. In order to ensure objective inspection, the Antarctic and Southern Ocean Coalition has been campaigning for an independent institutional inspectorate and expansion of the purposes of the present system to cover environmental aspects -- including compliance with all codes and environmental protection measures.

The Antarctic Treaty Consultative Meeting agreed that inspections could be expanded beyond their current compliance function to cover environmental obligations contained in the Protocol, the Annexes and Recommendations. Nations were "encouraged" to utilize the detailed U.S. checklist (which was developed with the strong input of ASOC members and includes environmental elements). The U.S. checklist was previously put on the table in 1989. However, once again it proved impossible to gain consensus for a formal endorsement of the checklist.

The U.S. Inspection Checklist was, however, appended to the Final Report, to "encourage" an extension of inspection functions. Joint inspections were also "encouraged", but the governments took no steps to set up a formal joint mechanism at this time. We anticipate that the U.S. will update the checklist in light of the new requirements imposed by the Protocol and the Annexes.

We urge that the Congress support the creation of a true joint inspection system, which can evolve into an independent Inspectorate of the sort envisaged by some governments and NGOs. The only way to ensure implementation of the Protocol where it counts--on the Ice, and adherence to its regulations, is through the creation of an independent inspection system.

In this general context, we would direct the Committee's attention to a portion of the model Convention on Antarctic Conservation that ASOC put forward during the negotiations, in particular Articles 27-29 on the Inspectorate that we proposed be created.

2. The Need for a Secretariat

A functioning Treaty Secretariat will be absolutely essential for the effective application of the Protocol. Despite strongly expressed and widespread support for the urgent establishment of a Secretariat, Argentina blocked consideration of any possibility at the Antarctic Treaty Consultative Meeting, including interim arrangements. Previous supporters of Argentina, including Chile, India and Uruguay, spoke in support of the Secretariat.

We urge the U.S. and other partners to undertake serious bilateral discussions with the Government of Argentina prior to next year's Consultative Meeting in Kyoto, focused on the Secretariat issue. Once the Protocol becomes effective, the Treaty will be unable to function properly without a Secretariat.

3. The Need for a Liability Annex

This is one of the major gaps left in achieving a "comprehensive" system of protection for the Antarctic. While we recognize that this is an especially difficult subject, it is imperative that the Antarctic Treaty members not shrink from the task. In addition to providing compensation for damage to research programs and the environment, liability also is an important tool to guide the behavior of operators. If there is the likelihood of liability, all operators, whether government or private, will use better equipment, will provide better training for their crews, and will take more urgent steps to deal with problems that arise.

The accident involving the Bahia Paraiso a few years ago near the U.S. Palmer Station, shows clearly why liability must be addressed. In that case, an Argentine vessel, doing double duty as a supply ship and a tourist cruise ship, ran aground and sank. The resulting oil pollution caused significant damage to the U.S. scientific research program and to local wildlife, and the U.S. spent several million dollars trying to deal with the spill. No liability has attached to Argentina to date.

A meeting of government lawyers will be convened in Heidelberg, Germany, later this week. We encourage the U.S. to take a strong leadership role at that meeting, in favor of strict, unlimited liability. We appreciate the support of the U.S. for the inclusion of non-governmental observers at that meeting, and hope that we will be allowed to participate in future meetings.

At last year's Treaty meeting, the Antarctic and Southern Ocean Coalition (ASOC) tabled its "model" Liability Annex, which was originally tabled at the Treaty meeting in Bonn in 1990, and several delegations commented that it would be useful for further negotiations. However, given the new requirements of the Protocol this Annex was out of date.

This past year, ASOC convened an international working group whose goal was to update and strengthen this Liability Annex. We have available now a draft Liability Annex, which we would be happy to share with members of Congress and the Administration. We have also published a Liability Reference Guide which surveys international practice, and will be a valuable guide for the meeting.

Attached as Annex 4 is "A Liability Regime for Antarctica--an ASOC Perspective".

4. Early entry into force of The Environment Committee

Although several nations supported the entry into force of the Environment Committee ahead of the Protocol, the U.S. and other nations were opposed. We would hope that the Congress could induce the U.S. to be a leader on this, since it may be some years before all of the ratifications are completed and the Protocol is in force. In the meanwhile, there is much practical work to be done, which can be fostered by the Committee. The Environmental Committee should be brought into operation this year, at least on an informal but practical basis. We urge that the U.S. advance this proposal at the forthcoming Antarctic Treaty Consultative Meeting in Kyoto next April.

In this context, we note that both H.R. 1066 and the Administration's draft legislation, in designating the qualifications of the U.S. representative to the Environment Committee, only specify that this person have the necessary "technical" qualifications. In our view, it may be wise to further specify the need for environmental and scientific qualifications for the U.S. representative.

THE ANTARCTICA PROJECT

August 23, 1993

Vice President Al Gore
Office of the Vice President
Old Executive Office Building
Washington, D.C. 20501

Dear Vice President Gore:

We are writing to express our concern over the decision to dissolve the State Department's Antarctic Advisory Committee. Since 1978, this Committee has been convened to solicit comments from members of the public with respect to U.S. Antarctic policy. It is a useful vehicle for the exchange of ideas and information for members of the public and the government. Meetings have always been held in advance of international Antarctic meetings, and in advance of major U.S. policy decisions.

This Committee has operated at no cost to the American taxpayer. It has been an invaluable tool in helping to reach consensus on U.S. Antarctic policy, by permitting the airing of points of view that might not have been considered within the interagency process.

We recently met with Assistant Secretary Elinor Constable, and expressed similar concerns. She agrees that convening the Antarctic Advisory Committee would be useful. As you know, the Administration is currently preparing legislation to implement the Antarctic Environmental Protocol. We have been working towards this goal for quite some time. If the mechanism to reach consensus was in place, we could envision a strong bill, supported by the key interests in the Antarctic, introduced during the current Congress. This could mean that the Protocol could be ratified for the U.S. before the next Antarctic Treaty Consultative Meeting in Japan, in April 1994.

As you know, the Protocol is vital to U.S. interests in Antarctica, and advances basic U.S. goals of protecting the Antarctic environment, while preserving the unique opportunities the region offers for scientific research of global significance. Timely implementation of the Protocol will help safeguard Antarctica's status as a global wilderness area and scientific laboratory. Until it is ratified and enters into force, all activity will be guided by mostly outdated, and in many cases, voluntary, recommendations which do not provide for comprehensive protection for the environment.

Ratification and enactment of good implementing legislation by the U.S. will provide momentum to ratify by other nations. It has already been almost two years since nations signed the Protocol. If we allow much more time to elapse, the U.S. will lose the opportunity to lead by example.

Please contact us if you would like additional information. We look forward to discussing this with you further. We hope you agree that dissolving the Antarctic Advisory Committee is not in the best interests of the U.S.

Sincerely,

Jim Barnes
International Director
Friends of the Earth

Beth Marks
Director
The Antarctica Project

cc: Undersecretary Tim Wirth
Assistant Secretary Elinor Constable

THE PLACE OF SCIENCE ON AN ENVIRONMENTALLY REGULATED CONTINENT

*Remarks of James N. Barnes**

at a Symposium on

"Changing Trends in Antarctic Research"

I. Introduction and Summary

One could answer the question posed by this topic very briefly by saying, science will be in first place, as it has been for a long time in the Antarctic.

Among the primary reasons why the environmental community has worked so hard to refocus governments on protection as opposed to exploitation of the region is that it seemed imperative to preserve the qualities that make Antarctica a global laboratory of great importance.

Thus, I would argue that the proper perspective provided by the conclusion of an Environmental Protection Protocol to the Antarctic Treaty is that science will be even more important than before, and that its possibilities are greater. I doubt that the Protocol will block any significant science from being carried out. Rather, the practical process of implementing the Protocol will help governments and scientific organizations focus more clearly on priorities for their scientific programs. The results will be (1) more efficient science, (2) more effective science, (3) more money for science, (4) more long-term monitoring programs, and (5) more directed research, for example, of the sort needed to effectively implement the "ecosystem as a whole" principle that lies at the heart of CCAMLR.

Among the likely positive benefits of putting aside the minerals question is that the political will to support globally significant science and long-term monitoring programs in a cooperative way will increase. This should result in greater sharing of bases, facilities and logistics, and a consequent

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*Mr. Barnes is Executive Director of The Antarctica Project and Head of the International Department at Friends of the Earth in Washington, D.C. He also serves as Counsel to the Antarctic and Southern Ocean Coalition.

decrease in environmental impacts caused by a redundancy of these support facilities.

If more globally significant science were the result, and not only as a theoretical phrase used at festive events, but as a practical reality, this would be a very good thing. The increased "transparency" of decision making will also make more clear the responsibility of scientists, for it is a truism that science is value-free, but scientists are not. As Lloyd Timberlake has written: "Science has a lot to answer for, it has invented weapons that can destroy Nature as we know it; it has produced chemicals which pollute our water system and our atmosphere. It is, in the democracies, up to the electorate and those they elect to harness and direct science to make that interplay between nature and ourselves more supportive of both nature and ourselves."

Inevitably, there will be many practical aspects to the implementation of the Protocol that managers of Antarctic programs will have to take into account. In turn, these practical aspects will change to some extent how science is done -- in particular, how it is serviced. The Treaty parties have been moving in this direction for several years. The Protocol has not been drafted in a vacuum; it ratifies that trend, and casts it in legally binding language, which is a major step forward. But the drafters and negotiators put in reasonable time frames for implementation, which will limit the burden on on-going scientific programs.

I know that there are fears in the scientific community that they will be "over-regulated" as a result of the Protocol. Richard Laws wrote a piece on this just recently, for example. But this is a misplaced fear. I doubt that there is any legitimate science that will be impeded by the conduct of an environmental impact assessment.

It is true that research requiring massive logistical support, especially if it had the potential of opening an area to other types of activities, will be scrutinized very closely, and properly so. For example, core drilling in the Dufek Massif would not, in itself, cause a problem, but a hardened runway to service the research might be. There also may be beneficial economic implications that result from the need to conduct an environmental impact assessment. A government might reconsider whether a research proposal of questionable merit should be given priority use of scarce funds. For example, if blow-out preventers were required on drilling operations in the ocean, to protect against the chance of a hole being bored on structure, a manager might conclude that it would be too expensive. Only time will provide the answers to these scenarios.

II. Role of Independent Scientists

I want to say a few words at this point about the role of SCAR and independent scientists in general. SCAR has had the responsibility of initiating, promoting and coordinating Antarctic science. It is the one international, interdisciplinary, non-governmental organization that is able to draw on the experience and expertise of scientists across the boundaries of nations and subject matter. SCAR's advice to the Treaty parties during the last thirty years has been excellent. Although environmental groups have sometimes criticized some SCAR reports, and its failure to weigh in on some contentious subjects, such as the construction of a hardened air field at Point Geologie, in general its advice on protecting the ecology and environment of the region has been ahead of government thinking at the political level. Several years ago, for example, SCAR made some good proposals on the question of environmental impact assessments, which took governments several years to agree to, and not in so strong a form as SCAR had proposed.

In working out the practical implementation of the Protocol, it is imperative to maintain a strong position for the provision of independent scientific views, through SCAR as well as other pertinent sources of such advice. The SCAR Group of Specialists on Environmental Affairs and Conservation was formed in order to provide such advice. In my view, SCAR should not, as a result of the Protocol, be replaced as the main body for advising the Antarctic Treaty System on the scientific aspects of environmental protection. NGOs look forward to working closely with SCAR in the future.

Without attempting to provide an exhaustive list of other sources of independent advice, there are obviously a range of other scientific groups, institutes, as well as individual scientists, with expertise to be utilized in the Antarctic. In a sister body, there is the CCAMLR Scientific Committee, and several other scientific groups, all looking into the implementation of CCAMLR's innovative "ecosystem as a whole" principle. Their expertise and present data bases should be extremely useful in the implementation of the new Protocol. Also, the international NGO environmental community includes a number of excellent scientists, who are available to the Antarctic Treaty System.

III. Globally Significant Science

I will speak briefly about the unique opportunities afforded by the Antarctic for research that contributes to an understanding of problems outside its boundaries. At present, Antarctica is a global scientific laboratory of immense value. The near pristine nature of the region provides a baseline against which we can measure pollution in more populated regions.

The information locked in its ice cap is helping us to better understand the climatological history of the planet.

Antarctica plays a key role in the energy balance of the globe; Antarctic research is crucial in the understanding of global change phenomena, ozone depletion and the greenhouse effect. The International Geosphere-Biosphere Programme (IGBP) has been established under the auspices of the International Council of Scientific Unions. IGBP describes the importance of the polar regions in this way:

> The polar regions are very sensitive to changes in the global environment and may act as "warning signals" to changes in the total energy flux into our Earth and to changes in the atmosphere. The polar regions also act as global historians, maintaining records of past global environmental conditions within their permanent ice fields.

The IGBP is coordinating international research efforts in the polar regions, focusing on prime indicators of global change: ozone concentrations, ice cores, polar ice levels, and polar temperatures. It is important that such phenomena be studied without interference from local sources of pollution. The IGBP has identified numerous priorities for its Antarctic components, which may be summarized as:

- o detection and prediction of global change;
- o study of critical processes that link the Antarctic to the global climate system;
- o provision of information on the history of environmental change; and
- o assessment of ecological processes and effects.

These investigations will allow humans to understand the interactive physical, chemical and biological processes that regulate the Earth's life support systems, the changes that are occurring, and how those changes are influenced by human activities.

The potential of the Antarctic for extremely important research on global problems is not being fully realized. Human ability to manage and control increasingly varied and intense human activities and their impacts on natural systems is dependent on a much better understanding of the interactions of fundamental components of the global ecosystem. Depletion of the ozone layer, global marine pollution, long-range transfer of pollutants, and climate change phenomena require coordinated studies on a global, interdisciplinary, multi-institutional basis. We all know this.

Antarctica has been a good proving ground for innovative scientific endeavor, such as the ozone depletion experiments and sophisticated analytical work done at high altitudes over Antarctica in recent years. It was as a result of measurements taken by British Antarctic Survey scientists at Halley Bay Station that we learned in 1985 that the ozone layer over Antarctica had been decreasing systematically during the period 1975 to 1985. In 1986 the U.S. National Science Foundation, National Oceanic and Atmospheric Administration, NASA and the Chemical Manufacturers Association organized an Antarctic Ozone Expedition Team, which took measurements on the ground and in balloons. That research led to a number of important papers on the problem and dramatically raised public awareness about the need for action to address the causes of ozone depletion.

Since then, increasingly sophisticated field instruments, research techniques, computers and satellite capabilities, have been used in the Antarctic. In general, these activities are beyond the resources of most nations and any individual research institution. Only through multi-national efforts can we begin to fully realize the benefits of increased understanding of the earth and its systems. Careful long-term planning and allocation of sufficient financial and intellectual resources are required, as well as continuity of support for these large global research and monitoring programs.

In the view of environmental organizations -- and I believe also in the view of most scientists -- not nearly enough financial support has been committed by governments to the IGBP Antarctic work plan.

It is also worth noting that in the Arctic, there is a new Arctic Science Committee (IASC), with which there should be close cooperation with Antarctic scientists working on global change phenomena.

IV. Other Scientific Realms

Turning to some other areas of science, the Protocol will help give countries the incentive to cooperate on biologically important questions -- questions that are unique to the Antarctic.

Many simple terrestrial and aquatic ecosystems found in Antarctica are available as models that can be used to follow critical biological processes both at the population and community levels. The Southern Ocean surrounding Antarctica plays a key role in regulating global tides, ocean currents, and sea levels. By protecting these waters, the Protocol and its Annexes, particularly the Waste Disposal and Marine Pollution Annexes, will enable countries to implement long-term programs

that will help elucidate the interaction of the Southern Ocean and the oceans and climate of the world.

Because the waters of the Southern Ocean are among the most biologically productive in the world, they support a unique, highly adapted and specialized ecosystem. Antarctica is the world's largest wildlife sanctuary, home to over 100 million birds, including seven species of penguins and six species of seals. It is the summer feeding ground for fifteen species of whales.

This huge marine ecosystem is unusual, as one krill species, Euphausia superba, helps to support all of the higher species. Antarctic krill is the major food source for five species of whales, three species of seals, twenty species of fish, three species of squid, and numerous penguin and other bird species.

Annual estimates of krill production range up to 15 million tons. *There is an active krill fishery in the Antarctic, which could interfere with the ability of these krill predators to obtain a sufficient diet to sustain themselves and their offspring if it is not properly regulated.*

The Convention on the Conservation of Antarctic Marine Living Resources was negotiated because several Treaty nations were concerned that over-exploitation of krill would lead to the general demise of the Antarctic marine ecosystem. This concern remains. *Due to the lack of information on the numerical and functional relationships between krill and other components of the Southern Ocean ecosystem, it has not been possible thus far to obtain agreement on a precautionary krill cap.* Among other things, there is no agreement on

- o the number, size and productivity of krill populations in the Southern Ocean
- o the biomass of krill necessary to sustain krill predators and ensure krill recruitment, or
- o the biomass that can be harvested safely.

It is reasonable to assume that the total population of krill could sustain the fishery at its current level, if the fishery were dispersed throughout the Southern Ocean. But the fishery is concentrated in those areas where krill swarms are known to occur. These are also the areas where krill predator populations seem to be the largest. *It is conceivable that the localized effect of fishing in these areas could cause significant impacts on one or more of the dependent populations.*

In view of the potential for a rapidly escalating krill fishery, there is a need to gather more data and to analyze

critically of the data collected so far on krill and krill predators in the Southern Ocean. The new era of cooperation encouraged by the Protocol could be a prime motivator in governments jointly undertaking the directed research programs that are essential in order to provide answers to critical questions such as those listed above, as well as the following:

1. How do the various krill predators locate and prey upon krill?

2. Will different harvesting practices, as well as different quantities of harvest, affect predators differently -- e.g., is krill availability to various predators dependent only upon total krill biomass, or on variables such as the number, size and density of krill swarms?

3. How long might it take for harvest-induced changes in krill availability to be reflected in and detected by on-going programs that monitor selected krill predators? How could/should fishery development be structured to take account of such time lags?

4. Is there any reason to believe that current harvest levels or practices may be having adverse impacts on krill stocks locally (e.g., in the South Georgia area), regionally (e.g., in statistical area 43), or throughout the Southern Ocean?

5. Given available data, what manner and level of krill harvests could be allowed in the various statistical areas with high (e.g., 95%) confidence that they would not have adverse effects on target, dependent, or associated species as defined in CCAMLR?

Given this overall context, one can examine the options coming before the CCAMLR this year, regarding a possible "krill cap" and related precautionary regulations. I believe that it is desirable to have an agreed cap on the krill harvest -- even if it is based on unreliable and insufficient data. But the level that is accepted must not be too high and must be acknowledged as preliminary, subject to further refinement. There is a need to keep moving toward a position of information that is sufficient for sophisticated -- and correct -- judgments to be made about the truly appropriate cap, by region, with whatever restrictions are needed in terms of timing of fishing to protect the breeding cycles of predators. ASOC will introduce an Information Paper on this subject at the CCAMLR meeting.

V. Conclusion

In conclusion, I submit that the new Environmental Protection Protocol will advance the missions of those national

agencies around the world that are conducting research in the Antarctic. The Protocol will neither interfere with nor harm scientific endeavors, but rather will help protect the region in perpetuity so that its scientific potential can be fully realized.

The Protocol has moved the world one step closer to realizing the values of the Antarctic. It is a zone of peace, providing experience in international cooperation. There is now added impetus for the nations of the world to work together, with NGOs in the scientific and environmental communities. When I say "nations" of the world, I mean to encompass all of the nations, not just those that have membership in the Antarctic club. In this context, there are some exciting possibilities of international bases being established.

The Antarctic is the world's only truly demilitarized zone. With the threat of mineral resource exploitation removed, this status will be preserved. It is the best place on earth to monitor and learn about global weather systems, global warming and ozone depletion. We have just begun to appreciate Antarctica's complex environment, and its major contributions to the Earth's life support systems. The Protocol has provided us with a large window of opportunity to pursue this multi-faceted investigation.

ANTARCTIC AND SOUTHERN OCEAN COALITION

A LIABILITY REGIME FOR ANTARCTICA

An Antarctic and Southern Ocean Coalition (ASOC) Perspective

To protect the environment: no limits, no excuses!

The Protocol on Environmental Protection to the Antarctic Treaty was completed and signed in October 1991, amidst much fanfare about a new era for environmental protection in Antarctica. And indeed, if it is brought into force and implemented in the spirit it was intended, it will bring about such a new era. However, there are still significant gaps in the Protocol--most being areas that require much elaboration before they become fully functioning and effective. Perhaps one of the most significant gaps is the lack of an Annex on liability.

The existence of this gap is recognised within the Protocol, which states (Art 16):

> Consistent with the objectives of this Protocol for the comprehensive protection of the Antarctic environment and dependent and associated ecosystems, the Parties undertake to elaborate rules and procedures relating to liability for damage arising from activities taking place in the Antarctic Treaty area and covered by this Protocol....

A liability regime is essential for the completion of the Protocol for several reasons. First, should an accident occur that threatens the Antarctic environment, it provides a legal obligation for immediate and ongoing action to mitigate the effects of that accident. Second, where it is not possible to restore the environment to the state it was in before the damage occurred, it provides for compensation to be paid. Third, by providing legal obligations, it gives Antarctic operators an incentive to be more cautious in the conduct of their Antarctic activities.

The particular value that we have placed on the Antarctic environment is recognised in the Protocol in Art 3(1):

> The protection of the Antarctic environment and dependent and associated ecosystems and the intrinsic value of Antarctica, including its wilderness and aesthetic values and its value as an area for the conduct of scientific research, in particular research essential to understanding the global environment, shall be fundamental considerations in the planning and conduct of all activities in the Antarctic Treaty area.

The sensitive nature of the Antarctic environment makes it difficult, if not impossible, to restore a damaged area to its

pre-incident condition. Thus, it is important to design a liability annex that provides strong incentives to take measures aimed at preventing any damage.

ESSENTIAL ELEMENTS OF A LIABILITY REGIME

So, what are the essential elements to a robust liability regime that will provide best possible protection for the Antarctic environment?

1. The focus of the regime must be to protect the environment, both by providing a deterrent against carelessness, and by ensuring that as much as possible will be done to mitigate the effect of any damage that does occur, whether as a result of an accident or resulting from a planned activity.

2. All Antarctic operators should be covered by the same principles. Attention must be given to the case of damage caused by non-Treaty parties, or non-state parties that do not come under the jurisdiction of Antarctic Treaty parties. Establishing a fund would make it possible to mitigate damage caused by such non-Treaty actors, although bilateral diplomatic action to attempt to recoup such costs should be encouraged.

3. The regime must provide that as much as is necessary is done and spent to achieve maximum possible mitigation of the effects on the environment of an accident or damaging activity. To ensure consistent deterrence against carelessness, liability should also include compensation money to be paid even if adequate clean-up is impossible.

4. The regime must provide a back-up system so that if immediate action is not taken by the perpetrator, or if the perpetrator cannot pay the entire costs of clean-up, another plan will swing into action. The environment must be cleaned up; litigation can come later.

5. The regime must not encourage delays in response action by leaving loopholes in liability provisions.

6. The environment must be fully covered in that there must be no circumstances, no matter how unusual or unforeseeable, that would relieve operators of their responsibilities. Liability must be based on the result, not on the wrongfulness of the deed.

FOCUS ON ENVIRONMENTAL PROTECTION

The Protocol, under which these liability rules will be established, is concerned with the protection of the Antarctic environment. Therefore, this liability regime should have as its driving principle the protection of the Antarctic environment. The inclusion of liability for loss or damage to property or persons

would detract from this driving principle and therefore, in the opinion of ASOC, should not be included in this particular regime. It should be addressed in another instrument if necessary.

There is obviously some question about the relationship between a liability regime and environmental impact assessment (EIA) procedures. Would an impact predicted by an EIA be subject to liability? ASOC believes that the prediction of an impact through an EIA should NOT absolve an operator from liability requirements.

A liability regime must also be able to cover impacts caused by activities carried out in the past. For example, oil barrels at abandoned stations that begin to leak should be subject to the same immediate mitigative action--and requirements for compensatory payment where full mitigation is not possible--as any other human-caused impact.

UNLIMITED LIABILITY

There should be no limit on the amount of money that will be spent in response to environmental damage. Any such limit would be arbitrary with respect to the cost on the environment of any given accident, and would therefore go against the principles of environmental protection being paramount. This does not necessarily preclude setting limits on the amount the perpetrator has to pay--but if such a limit is set, then there must be a back up fund which will guarantee to provide whatever else is necessary.

STRICT LIABILITY

Strict liability means that it is not necessary to prove that the operator was negligent. It reduces the chance that reaction to the damage will be delayed while responsibility is determined. There are also other significant advantages.

First, it encourages both private and governmental operators to enact precautions to insure that environmental damage does not occur.

Second, a standard of strict liability places the burden of expense on the individuals seeking to profit by an activity, whether monetarily or otherwise, and not on the innocent victims. This principle simply seeks to place the burden of expense on the party best able to absorb it.

Finally, strict liability is generally considered appropriate where an abnormally dangerous activity is being undertaken. Presently, strict liability may be observed in the areas of nuclear, space, and oil transport activities. Due to the fragile nature of the Antarctic environment, any adverse impact could result in severe repercussions, and thus be considered abnormally dangerous. By treating activities in Antarctica as such, and imposing strict

liability, the world would be taking a positive step in the preservation of this magnificent wilderness.

OTHER MEASURES TO ENSURE IMMEDIATE ACTION

In order to ensure maximum and most effective response action, there must be no disincentives for whomever is close to an accident, and has the capability, to participate in mitigative action. Therefore, there must be a well-established mechanism whereby operators (both governmental and non-governmental) can recoup the costs of such action. This means a well-established and easy-to-initiate system for claiming reimbursement and, if necessary, for resolving disputes.

There must also be back-up funding available to ensure that, even if the perpetrator runs out of money, the clean-up or other mitigative action will still occur. This will probably require the establishment of a reasonably-sized fund. This should be established from a levy on all Antarctic operators (governmental and non-governmental), perhaps with a fee based on number of person-days or a levy on fossil fuels used south of 60 degrees. The basis of the levy should be reviewable as perceptions on the main risks to the Antarctic environment change.

CONCLUSION

Because of the Antarctic's near-pristine nature and the value we have placed upon it, and the particular risks associated with Antarctica's harsh climate, it is essential that extra care should be taken when operating in Antarctica. A strong liability regime will play a significant role in ensuring such care.

October 1993

NATIONAL SCIENCE FOUNDATION
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OFFICE OF POLAR PROGRAMS

February 24, 1994

The Honorable Sam Gejdenson
Chairman
Subcommittee on Economic Policy,
Trade and Environment
Committee on Foreign Affairs
House of Representatives
Washington DC 20515

Dear Mr. Gejdenson,

Thank you for your letter of December 2, 1993. I appreciate the interest of the Subcommittee in implementing the Environmental Protocol to the Antarctic Treaty. Enclosed are responses to the follow-up questions you have asked.

If you have any further questions, please do not hesitate to contact me.

Sincerely,

Cornelius W. Sullivan
Office Director

NSF's Written Response to the Record
Antarctica Hearing, Nov. 16, 1993

Citizen Suits

1. Please elaborate on how [the citizen suit provision] will operate and its implications.

The Administration bill provides for judicial review of final regulations and final agency action on permits, and for citizen suits allowing private parties to bring suit against person or entities (including Governmental ones) who they allege have violated any permit, regulation or prohibition in effect under the provisions of the bill. If, for example, NSF issues regulations that a private citizen believes are inconsistent with the new bill's provisions, that private citizen could bring suit to have the court decide the issue.

The prospect of citizen suits did raise some concerns within the scientific community, and some believed individual scientists might forego Antarctic research rather than subject themselves to the possibility of such lawsuits. In order to address these concerns, the Administration bill prevents citizens from bringing enforcement actions against individual scientists and universities engaged in scientific research activities in connection with a Federal research program, but allows private parties to petition relevant Federal agencies to take enforcement action against such scientists and universities. Of course, scientists and universities remain subject to administrative, judicial and criminal actions and sanctions if they violate any permit, regulation or prohibition.

Science Perspective

1. How do you assess the impact of the Protocol itself on the conduct of science-- Does it hinder or facilitate it ?

The Protocol will have a positive impact on science in Antarctica. It has two goals, protecting the Antarctic environment and preserving the continent for peace and science. Protecting the Antarctic environment contributes to the quality of the science; all scientists have a strong interest in attaining the goals of the Protocol. The unique qualities of the Antarctic environment, including its essentially unspoiled nature, make it an ideal location for conducting science.

2. In a similar vein, how would you assess the Administration bill and its impact on science?

Because the value of Antarctica as a natural laboratory depends, in large part, on the condition of the environment there, we believe the bill will have a very positive impact on science. It will ensure the protection of the Antarctic environment, thus preserving the

continent's value for scientific research, but does not impose unnecessarily burdensome requirements.

National Research Council Report

1. How well do you think [the recommendations of the National Research Council] are reflected in the Administration's draft bill? Are there any short-comings or gaps, or suggestion you wish to offer?

We believe that the process undertaken by the National Research Council (NRC) was a constructive one that highlighted issues of particular importance to Antarctic researchers and offered input in several areas. For the most part, the Foundation agrees with the recommendations in the NRC report, and, in those cases, the Administration's bill is consistent with them. We support, for example, the NRC's recommendation that legislation implementing the Protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.

2. Do you fully concur with the report? If not, where do you disagree?

There are a few points in the NRC report with which we disagree, particularly with respect to the allocation of regulatory responsibilities among various Federal agencies. The Administration believes that the regulatory scheme established by its bill best achieves the objectives of the Protocol.

Environmental Assessment and NEPA

1. Following the court case of Environmental Defense Fund (EDF) v. Massey which ruled that NEPA does apply to the U.S. Antarctic Program, is there now any question that NEPA's environmental assessment provisions fully apply to Antarctica?

In EDF v. Massey, the court held that the National Environmental Policy Act applies to Federal activities in Antarctica. We are complying and will continue to comply with that decision.

Since the Federal court's decision in EDF v. Massey, NSF has prepared over twenty environmental assessments of activities undertaken in Antarctica. We have also hired two full-time staff with environmental compliance experience, one of whom has spent most of his career involved with NEPA and came highly recommended by the Environmental Protection Agency. That individual is now leading the effort to integrate NEPA and the environmental assessment requirements of the Protocol with our decision-making process.

2. Why does the draft bill need [to be] the "exclusive mechanism" for EIAs (which, in essence, restricts the application of NEPA in Antarctica to only the specific language in this bill)?

The environmental impact assessment provisions of the Administration bill specify how NEPA will be implemented for Federal activities in Antarctica. The Protocol itself includes very specific and stringent assessment requirements applicable to all activities in Antarctica, and domestic implementing legislation must take those requirements into account. Rather than establish separate assessment documentation requirements that employ different nomenclature, the Administration bill establishes one system that satisfies the requirements of both NEPA and the Protocol, without unnecessary and duplicative administrative processes. This integration ensures that the potential environmental impacts of a proposed activity will be taken into account in determining whether and how to go forward with that activity.

Activities With Foreign Governments

1. Why is it necessary or advisable to exempt U.S. agencies from NEPA when joint activities are to be done?

Regardless of whether or not an activity is jointly conducted, the Protocol requires all activities with at least a minor or transitory impact on the Antarctic environment to be assessed, and this requirement is fully reflected in the Administration bill. The question for joint activities is not whether an appropriate assessment will be undertaken, but which Party will take the lead in preparing it. Under the Administration bill, the State Department is responsible for making this determination, and it will base its decision on the level of U.S. involvement in the activity. To require the U.S. to prepare its own assessment in all cases would be duplicative and would therefore violate the spirit of the Protocol.

2. Would you consider that relinquishing our responsibilities to do a legally mandated NEPA assessment would be ceding part of our sovereignty to a foreign nation?

We do not believe that the Administration bill relinquishes such responsibilities. It requires Federal agencies to prepare environmental documentation in all but a handful of cases, and in those few cases recognizes the framework established by the Protocol for international cooperation.

3. To avoid the NEPA process, and allow a foreign government to do the environment assessment means there is no opportunity for public in-put into the decision making process -- What recommendations do you have to address that problem?

There is, in fact, significant opportunity for public input into the decision-making process. Article 3 of Annex I of the Protocol requires the circulation of both draft and final Comprehensive Environmental Evaluations whether prepared by the United States

or by another Party. Under this scheme the public will have ample opportunity to comment on environmental documentation prepared by foreign countries.

4. What is the US experience with joint activities in Antarctica: The number; Who initiated them; and What Environmental Assessment procedures were followed?

Since the International Geophysical Year -1957-58, which marks the beginning of the modern era of Antarctic research, international cooperation has been a hallmark of our scientific efforts. The Antarctic Treaty and its Environmental Protocol further the commitment to international teamwork in Antarctica.

The Administration bill provides that an agency designated by the President will, through regulations, define the term 'Antarctic joint activity.' As a result, it is not yet clear which activities will fall within that definition, and which will not. Some examples of activities that we have undertaken with foreign participation are provided below.

Many of USAP's individual science projects have foreign participants, ranging from senior researchers to graduate students, and as part of the proposal process in those cases, scientists complete a short form considering the possible environmental consequences of their projects. Those forms are then reviewed by the professional environmental staff at NSF who determine whether more detailed consideration is required. If so, it is conducted under NSF's assessment regulations.

NSF also undertakes some large scale joint research activities. These may go on over a period of years, and involve more formal cooperation from the supporting governments. For the past two years, NSF provided support to six of these programs. Two examples will give a sense of the scope of these efforts:

> A team of investigators from the US, United Kingdom and New Zealand worked together to collect geologic samples which are being analyzed to develop an understanding of the tectonic evolution of Marie Byrd Land. The US provided LC-130 aircraft support; the UK provided Twin Otter aircraft support; and NZ provided equipment. This joint research effort was initiated by the participating scientists, and representatives of the three national programs negotiated the sharing of the support requirements. The US activities were covered under NSF's Supplemental Programmatic Environmental Impact Statement.
>
> This season US, Japanese and Polish researchers plan to launch, track and recover two circumpolar stratospheric research balloons carrying payloads consisting of emulsion chamber boxes recording cosmic ray tracks. The goals of this project are to measure the cosmic-ray energy spectrum and composition in the ultra-high energy range (approaching 1,015 electron volts) and to study nuclear interactions at these energies. This joint effort was initiated by U.S. and Japanese investigators and has involved collaboration over the past ten years, with many experiments conducted outside Antarctica. The US is providing logistic support for the long

range ballooning effort; this support, also provided to other ballooning projects, was assessed in an NSF Environmental Action Memorandum in 1991.

NSF also participates in cooperative international logistic support efforts not tied to specific science projects. For instance, Italy and New Zealand C-130 (wheeled) Hercules transport aircraft provide logistics support to the United States Program in the beginning of the season in exchange for USAP LC-130 (ski-equipped) Hercules transport aircraft support in the later part of the season when skis become necessary for routine transportation between Antarctica and New Zealand. The US contribution to this effort is assessed in the Supplemental Programmatic Environmental Impact Statement.

5. Is there a threshold or percentage of participation which will determine whether the U.S. or another country will do the assessment? (--In the extreme, is it possible that a nation might be a joint partner merely to do the EIA, and thus totally circumvent our own NEPA law?)

The Administration bill assigns the State Department responsibility for determining when another Party is coordinating implementation of environmental impact assessment procedures. It also requires that the Secretary of State and the Administrator of the Environmental Protection Agency provide Congress with annual reports describing, among other things, Antarctic joint activities and the environmental impact documentation associated with them. Neither NSF nor any other agency intends to use the joint activity provisions of the Administration Bill to avoid legitimate assessment responsibilities, or to include a nation in a project in order to evade domestic assessment requirements.

6. Do you agree this is a major loophole; Any suggestions to remedy this?

We do not believe the joint activity provisions create a loophole. Both the Protocol and the Administration bill require assessment of all joint activities with at least a minor or transitory impact on the Antarctic environment, and both also require that Comprehensive Environmental Evaluations, whether prepared by a U.S. Government agency or a foreign nation, be subject to public comment in the U.S. We view the Administration bill's provisions in this area as necessary to give effect to the provisions of the Protocol that encourage cooperation among the various Parties.

Protocol vs. U.S. Law

1. To what extent should U.S. legislation exceed the Protocol's standards and provide a model for other nations to emulate.... Shouldn't we provide the highest standard possible for the pristine Antarctic environment?

We believe the Administration bill best achieves the objectives of the Protocol and of this administration --ensuring the protection of the Antarctic environment without unnecessarily impeding scientific research in Antarctica. It does so by requiring

comprehensive waste disposal and waste management regulations, but allowing the regulatory agencies sufficient flexibility to adapt regulations to the unique conditions that exist in Antarctica. We strongly believe that a proper balance has been achieved in this implementing legislation.

Waste Management

1. Hasn't NSF recently stopped using leaded gas; ceased open burning; suspended incineration; and stopped using landfills?

NSF has generally stopped these actions or activities, but for the record I would like to add some qualifications.

While all of the over 200,000 gallons of gasoline used each year at McMurdo and South Pole Stations is unleaded, NSF still uses limited amounts of leaded gasoline at its operations on the other side of the continent. About 500 gallons per year is purchased in Chile for use in outboard motors and small generators at Palmer Station and associated field camps. Unleaded gasoline is not available in Chile.

Open burning has been stopped at all of the permanent stations, and will cease by March at the few remaining remote sites where we still use this technique. NSF discontinued landfilling at all stations last year.

NSF has suspended incineration, but, as you know, we are still completing the environmental analysis on proposed removal to the U.S. of food waste that was previously incinerated at McMurdo.

2. The draft legislation bans open burning by March, 1994 -- wouldn't it make sense to include in the legislation bans on these other activities that NSF is no longer doing? From an environmental leadership standpoint we would be setting an important precedent for other nations to follow.

NSF is already demonstrating the United States Government's environmental leadership by removing virtually all of our solid and hazardous waste from Antarctica - millions of pounds of material per year. This shows that good management and good environmental practices can, in fact, go hand in hand.

In many cases, the Administration bill does specifically prohibit particular activities -- open burning is prohibited after March 1, 1994, and land filling is not a permissible method of waste disposal. Further bans on other activities, such as incineration, might actually interfere with NSF's ability to use new, yet to be discovered, environmentally sound waste management practices in the future.

3. It is troubling to know that raw sewage is being pumped into McMurdo Bay. Shouldn't there be secondary sewage treatment? How difficult would it be to implement? Is there an important reason why that can't be done?

Many factors must be considered in determining how McMurdo's sewage should be handled, including the impacts of sewage effluent on the marine environment, the additional energy requirements associated with various sewage treatment alternatives, and the impacts of extreme weather conditions on various sewage technologies. We have initiated a comprehensive research program to better understand the physical and biological characteristics of the waters off McMurdo Station. With that information, we will be able to make reasoned decisions about the requirements necessary to protect those waters.

Human wastes generated by USAP participants are now being managed in compliance with Protocol requirements, but we have initiated the engineering studies to determine the requirements and impacts of various sewage treatment alternatives. We are also evaluating treatment alternatives that offer the broadest range of compatibility with other technologies or treatment schemes. For instance, we are considering evaluating hydroponics use in treatment and the possible reuse of water after extended treatment. On the other hand, we are also placing particular emphasis on investigating commercially available prefabricated plants.

Environmental Principles of Article 3

1. The draft bill includes the binding environmental principles of Article 3 as a "finding" rather than put in the policy section; and further notes that "Residual regulatory authority" is given to agencies to cover situations not specifically addressed in the Protocol. Is this adequate to ensure these important and binding environmental principles are fully adhered to?

We believe that the draft bill, which reiterates the Article 3 principles in its policy section, will ensure adherence to those environmental principles. The reasons for our belief are elaborated upon in the Department of State's response to this question.

2. What does "residual regulatory authority" encompass; does it include monitoring, self-compliance and self-enforcement? How will you implement this?

The bill grants various agencies the authority to issue "regulations which address a situation not covered by the Annexes to the Protocol or in which a more rigorous or supplemental requirement is necessary" in areas within their purview, and the term "residual regulatory authority" refers to, among other things, this type of regulatory authority. Because Antarctic operations, activities and circumstances cannot always be anticipated and, therefore, may not be fully addressed in the Protocol, the residual regulatory authority provision allows agencies to regulate activities in ways not specifically anticipated by the Protocol parties. The concepts of "self-compliance" and

"self-enforcement" are separate issues not directly relevant to the question of residual authority, and monitoring issues are addressed in Section 8 of the bill.

Mining Ban

1. The 1990 Antarctic Protection Act banned mining by all U.S. citizens - Do you believe the ban is indefinite or permanent?

The Department of Commerce is charged with the responsibility for implementing the provision of the Antarctic Protection Act of 1990 (APA) and for promulgating regulations relating to Antarctic mineral resource activities under the Administration bill. We defer to their interpretation of the APA's provisions.

2. Is there any concern that the minerals ban could be circumvented under the guise of scientific research? What specific measures or bill language would you recommend to avoid that?

We believe the Administration's bill adequately addresses these issues by providing the Department of Commerce with authority to regulate in this area, and no additional legislative measures are necessary. Regulations will likely provide more specificity in distinguishing between scientific research on the one hand, and minerals exploration and development on the other. We are confident that the Administration bill and the Department of Commerce's regulations will not allow circumvention of the minerals ban.

NATIONAL RESEARCH COUNCIL
COMMISSION ON GEOSCIENCES, ENVIRONMENT, AND RESOURCES
2101 Constitution Avenue Washington, D.C. 20418

January 18, 1994

Honorable Sam Gejdenson
Chairman, Subcommittee on Economic Policy,
Trade and Environment
Committee on Foreign Affairs
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Gejdenson:

I am writing to you on behalf of the Polar Research Board (PRB) of the National Research Council in reply to your letter of December 2, 1993. In that letter you asked a number of questions related to our recent report and testimony on implementing legislation for the Antarctic Environmental Protocol. While the report of the PRB's Committee on Antarctic Policy and Science (CAPS), Science and Stewardship in the Antarctic, was written to evaluate the possible impacts of policy decisions on scientific programs in Antarctica, your questions go beyond that report in some instances, and the Board must rely on previous studies to respond. Since its establishment over 35 years ago, the PRB has been providing scientific advice to the government regarding issues of science and technology in the Antarctic, and it has also represented the interests of the United States in non-governmental international organizations concerned with the conduct and coordination of scientific endeavor on that continent. The PRB welcomes this opportunity to provide input to your deliberations.

Scientific Perspective:

-- How do you assess the impact of the Protocol itself on the conduct of Science? Does it hinder or facilitate it?

The PRB and CAPS believe that the Protocol will have a positive impact on the conduct of science in Antarctica. The Protocol stresses the objective of preserving Antarctica's value for scientific research. This additional awareness has already encouraged protective steps, in tourism for example, that will be of great help in the maintenance of effective antarctic scientific programs. The Protocol will likely also provide the impetus for preparation of well organized administrative procedures so scientists will have greater certainty of the regulatory conditions they will be working under. As well, the enhanced monitoring procedures called for should provide useful data for establishing environmental baselines relevant to many areas of scientific research. Provisions for increased

international consultation, exchanges of information, and collaboration resulting from the Protocol should help foster the development of cooperative, non-duplicative and mutually supportive research programs among the countries engaged in antarctic scientific activities. It is our hope that the Protocol will assure that all antarctic scientists are conducting research on a level playing field, subject to similar environmental requirements and standards.

-- In a similar vein, how would you assess the draft bill and its impact on science?

While the draft legislation was not reviewed by CAPS, which was disbanded upon issuance of its report in July 1993, the PRB discussed the draft bill in the context of the CAPS report and found that much of the spirit of the report was present in the draft. However, the Board found there were some points that merited concern for their potential impact on science and should be revised, and others which were not in accordance with the Committee's recommendations. Those are addressed in the sections that follow.

National Research Council Report

How well do you think [the] recommendations (of Science and Stewardship in the Antarctic) are reflected in the Administrations's draft bill? Are there any shortcomings or gaps, or suggestions you wish to offer?

Eight major recommendations are made in the CAPS report. The draft legislation accommodates several of them, and does not address others. The first recommendation is: ***As a guiding principal, legislation should provide a process based on appropriate substantive requirements, such as those in Article 3 of the Environmental Protocol, rather than a prescription for meeting the requirements of the Protocol. The process should be balanced so as to provide flexibility as well as clarity for meeting requirements.*** The draft legislation repeats some of the prescriptive requirements of the Protocol. Thus, if the Protocol is changed, Congress would also have to amend the implementing legislation to extend those revisions to U.S. domestic legislation. Of particular concern to scientists is the ban on battery disposal in Annex III, Article 2(1)(b) of the Protocol, now reiterated in Section 6(e)(2) of the draft legislation. As discussed on page 21 of the CAPS report, the use of some small, non-retrievable batteries is critical to certain types of research. International discussions are now underway to revise the requirement in the Protocol to allow for the conduct of certain research activities that could abandon small electrical batteries on the continent. After the Protocol is amended in this regard, the U.S. implementing legislation will have to be amended too if such specific, prescriptive requirements are

enacted. The eventual implementing law and the resulting regulations should remain flexible to allow for the difficult conditions in which research is conducted in Antarctica, to respond to the different ways in which science is conducted there, and to respond to emergency conditions.

The second recommendation is: *The United States should encourage the Committee for Environmental Protection (CEP) to establish a formal science advisory structure for itself, which would include representatives of all interested parties. The nation should select a representative to the CEP who has both technical and policy credentials, and should establish a national process for providing scientific and environmental advice to the CEP representative.* The draft legislation, Section 10, does not go beyond the appointment mechanism for the U.S. representative to the CEP. An additional subsection requiring the Department of State to develop ways to provide the representative with scientific and environmental information would meet the intent of the second part of our Committee's recommendation. The establishment of a formal science advisory structure for the CEP would have to come through agreement of the Antarctic Treaty Consultative Parties, not through domestic legislation.

Recommendation number 3 is: *Monitoring activities—both those under way and additional ones that will be needed to comply fully with the Protocol—should be directed to answer important national and international governance questions, and designed and conducted on the basis of sound scientific information with independent merit review.* The legislation (Section 8) provides for development of regulations on monitoring that measure impacts from activities allowed following a comprehensive environmental evaluation (CEE), or an initial environmental evaluation (IEE). Section 8 also provides for flexibility in the rulemaking process. The CAPS report (page 56) provides guidance for the design of future monitoring activities.

The fourth recommendation of the Committee dealt with the matter of logistics (e.g., ships, planes, personnel) for supporting the requirements of the Protocol as well as carrying out scientific programs in Antarctica: *Where more efficient operational modes can be identified, they should be implemented quickly and the savings applied to the conduct of science and to meeting the needs of the Protocol.* This recommendation is not addressed by the draft legislation, but it could perhaps be included in Section 11 on Oversight. The Committee suggests it might be prudent for NSF to continue to reevaluate annually the appropriate number of personnel, aircraft, and ships used each year for logistics and support with particular emphasis on cost effectiveness.

Recommendation 5 has four parts. The first (5a) is: *The existing management relationship between the National Science*

Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects and their approval, funding, and oversight, should remain intact, modified only as new scientific and environmental requirements might suggest. The draft legislation would not alter this relationship.

Recommendation 5b is: *The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant technical expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.* Section 6 of the draft legislation provides for such activities.

Recommendation 5c is: *Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National Science Foundation for a wastewater treatment facility and would conduct periodic inspections.* In this case, Section 5 of the draft legislation requires issuance of permits by an agency other than NSF only when an action to be taken deals with living resources. In the instance of construction or waste disposal, the draft legislation establishes a consultation process with other agencies such as EPA, leaving NSF to issue permits to itself in some matters for which such decisions would normally be made by another agency in the U.S.

Recommendation 5d is: *A special group should be established to provide general oversight and review of:*

- *proposals on the concept, location, design, etc., of major U.S. facilities, or significant alterations to existing facilities in Antarctica;*
- *environmental monitoring activities; and*
- *National Science Foundation program actions to ensure compliance by U.S. personnel (i.e., scientists and others supported by the government) as required by the Protocol and implementing legislation.*

The draft legislation (Section 11) provides for a team under the authority of the Department of State to conduct an on-site inspection of the U.S. Antarctic program at intervals of from 2 to 5 years with a view towards examining overall compliance with the Environmental Protocol. This provision does not go as far as

the CAPS recommendation (page 64 of the report) in providing continuing general oversight and review of the U.S. Antarctic program through a standing committee. An amplification of this matter is included in another question below.

The sixth recommendation is: *Legislation implementing the Protocol should not impose additional delays in the approval of scientific projects determined to have no more than a minor or transitory impact on the antarctic environment.* It appears the proposed legislation would not delay the approval of these types of projects beyond the time it takes to prepare an IEE (Section 7(2)(B)).

Recommendation 7 of the Committee was: *Legislation implementing the Protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.* Public involvement will be accomplished in the draft legislation through the public rulemaking process for regulations (Section 13), the permit application process (Section 5), the availability of IEE's and CEE's to the public (Section 7), publication of reports of the oversight team (Section 11) and the opportunity for civil suits (Section 14). However, when we testified before you on this last matter, we stated that "...since U.S. legislation must ultimately be consistent with any international liability regime, the Committee suggested, and the Polar Research Board firmly believes, that the Congress may wish to defer addressing the issue of liability in implementing legislation until this international framework has been more clearly established and the negotiation of the annex has been completed."

Recommendation 8 is: *The U.S. representative to the Committee for Environmental Protection (CEP) should encourage the CEP to organize and undertake periodically an international scientific assessment of the state of scientific understanding of environmental problems and challenges in the Antarctic.* This matter, as in recommendation 2, will require follow-through by the Department of State at the international level, rather than by inclusion in legislation.

Recommendation 5(d) of [the Committee] report calls for a special group to be established to provide general oversight. -- What do you propose would be the mandate of that group, and how should it operate to achieve its objectives?

As stated above, the oversight inspection team called for in Section 11 of the draft legislation does not accomplish the objectives set forth by the Committee's recommendation. A process which establishes a standing scientific/technical committee as an adjunct to the Antarctic Policy Group of the National Security Council, that would meet regularly to review

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-- Do you believe this is adequate to ensure these important and binding environmental principals are fully adhered to? If not, do you have suggestions to offer?

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(South Africa), Crozet and Kerguelen Islands (France), and McDonald Islands (Australia). The proposed Convention on the Regulation of Antarctic Mineral Resources Activities (CRAMRA), Article 5, applied only to the areas south of 60 degrees south latitude. The boundaries cited in the draft legislation are inappropriate.

The definition of "Antarctic mineral resource" (Section 3(3)) in the draft legislation is a revision of the terminology of the CRAMRA Article 1 (6), but is inaccurate and warrants re-examination. For example, U.S. Geological Survey Professional Paper 820 (1973) defines mineral resource as a "concentration of elements in a particular location in or on the earth's crust in such a form that a usable mineral commodity can be extracted from it." If the law's intent is to stop indiscriminate collection of rocks and fossils by tourists, it could be addressed elsewhere in the law, or the definition of "Antarctic mineral resource" could be broadened to include rocks and fossils.

Section 3(4)(A) could be made more specific by including "Scientific research in the earth sciences". This addition would be consistent with previous reports of the PRB (1991, 1981, 1970) which enumerate various aspects of earth science research in Antarctica which require understanding and the conduct of mineralogy as a fundamental element of the scientific effort.

Sections 3(7)(A) and (B), could state that "development" does not include scientific research activities as defined in Section 3(4)(A). Section 3(23)(A) could similarly state that "Prospecting" does not include scientific research activities as defined in Section 3(4)(A).

Again, thank you for this opportunity to comment on the draft legislation and contribute to the Congress' deliberations on this important matter. The PRB is always interested in providing assistance and advice to the Congress and federal agencies on issues such as these. I would welcome the opportunity to meet further with you and your staff to discuss how the PRB could do so in other problem areas of the international Arctic and Antarctic that are of interest to your Committee and Subcommittee. I can be reached at (202) 334-3479.

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REFERENCES

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Managing Wastewater in Coastal Urban Areas, Committee on Wastewater Management for Coastal Urban Areas, Water Science and Technology Board, Commission on Engineering and Technical Systems, National Research Council, 1993.

United States Mineral Resources: Geological Survey Professional Paper 820, U.S. Geological Survey, U.S. Department of Interior, 1973.

Polar Research, A Survey, Committee on Polar Research, National Research Council, 1970.

Earth Science Investigations in the United States Antarctic Research Program (USARP): For the Period July 1, 1980--June 30, 1981, Polar Research Board, Assembly of Mathematical and Physical Sciences, National Research Council, 1981.

United States Antarctic Research, Report to the Scientific Committee on Antarctic Research (SCAR) Number 32 -- 1990, Polar Research Board, U.S. National Committee for Antarctic Research, National Research Council, National Academy of Sciences, 1991.

NATIONAL RESEARCH COUNCIL
COMMISSION ON GEOSCIENCES, ENVIRONMENT, AND RESOURCES
2101 Constitution Avenue Washington, D.C. 20418

January 18, 1994

Honorable Sam Gejdenson
Chairman, Subcommittee on Economic Policy,
Trade and Environment
Committee on Foreign Affairs
U.S. House of Representatives
Washington, DC 20515

Dear Chairman Gejdenson:

I am writing to you on behalf of the Polar Research Board (PRB) of the National Research Council in reply to your letter of December 2, 1993. In that letter you asked a number of questions related to our recent report and testimony on implementing legislation for the Antarctic Environmental Protocol. While the report of the PRB's Committee on Antarctic Policy and Science (CAPS), Science and Stewardship in the Antarctic, was written to evaluate the possible impacts of policy decisions on scientific programs in Antarctica, your questions go beyond that report in some instances, and the Board must rely on previous studies to respond. Since its establishment over 35 years ago, the PRB has been providing scientific advice to the government regarding issues of science and technology in the Antarctic, and it has also represented the interests of the United States in non-governmental international organizations concerned with the conduct and coordination of scientific endeavor on that continent. The PRB welcomes this opportunity to provide input to your deliberations.

Scientific Perspective:

-- How do you assess the impact of the Protocol itself on the conduct of Science? Does it hinder or facilitate it?

The PRB and CAPS believe that the Protocol will have a positive impact on the conduct of science in Antarctica. The Protocol stresses the objective of preserving Antarctica's value for scientific research. This additional awareness has already encouraged protective steps, in tourism for example, that will be of great help in the maintenance of effective antarctic scientific programs. The Protocol will likely also provide the impetus for preparation of well organized administrative procedures so scientists will have greater certainty of the regulatory conditions they will be working under. As well, the enhanced monitoring procedures called for should provide useful data for establishing environmental baselines relevant to many areas of scientific research. Provisions for increased

international consultation, exchanges of information, and collaboration resulting from the Protocol should help foster the development of cooperative, non-duplicative and mutually supportive research programs among the countries engaged in antarctic scientific activities. It is our hope that the Protocol will assure that all antarctic scientists are conducting research on a level playing field, subject to similar environmental requirements and standards.

-- In a similar vein, how would you assess the draft bill and its impact on science?

While the draft legislation was not reviewed by CAPS, which was disbanded upon issuance of its report in July 1993, the PRB discussed the draft bill in the context of the CAPS report and found that much of the spirit of the report was present in the draft. However, the Board found there were some points that merited concern for their potential impact on science and should be revised, and others which were not in accordance with the Committee's recommendations. Those are addressed in the sections that follow.

National Research Council Report

How well do you think [the] recommendations (of Science and Stewardship in the Antarctic) are reflected in the Administrations's draft bill? Are there any shortcomings or gaps, or suggestions you wish to offer?

Eight major recommendations are made in the CAPS report. The draft legislation accommodates several of them, and does not address others. The first recommendation is: ***As a guiding principal, legislation should provide a process based on appropriate substantive requirements, such as those in Article 3 of the Environmental Protocol, rather than a prescription for meeting the requirements of the Protocol. The process should be balanced so as to provide flexibility as well as clarity for meeting requirements.*** The draft legislation repeats some of the prescriptive requirements of the Protocol. Thus, if the Protocol is changed, Congress would also have to amend the implementing legislation to extend those revisions to U.S. domestic legislation. Of particular concern to scientists is the ban on battery disposal in Annex III, Article 2(1)(b) of the Protocol, now reiterated in Section 6(e)(2) of the draft legislation. As discussed on page 21 of the CAPS report, the use of some small, non-retrievable batteries is critical to certain types of research. International discussions are now underway to revise the requirement in the Protocol to allow for the conduct of certain research activities that could abandon small electrical batteries on the continent. After the Protocol is amended in this regard, the U.S. implementing legislation will have to be amended too if such specific, prescriptive requirements are

enacted. The eventual implementing law and the resulting regulations should remain flexible to allow for the difficult conditions in which research is conducted in Antarctica, to respond to the different ways in which science is conducted there, and to respond to emergency conditions.

The second recommendation is: *The United States should encourage the Committee for Environmental Protection (CEP) to establish a formal science advisory structure for itself, which would include representatives of all interested parties. The nation should select a representative to the CEP who has both technical and policy credentials, and should establish a national process for providing scientific and environmental advice to the CEP representative.* The draft legislation, Section 10, does not go beyond the appointment mechanism for the U.S. representative to the CEP. An additional subsection requiring the Department of State to develop ways to provide the representative with scientific and environmental information would meet the intent of the second part of our Committee's recommendation. The establishment of a formal science advisory structure for the CEP would have to come through agreement of the Antarctic Treaty Consultative Parties, not through domestic legislation.

Recommendation number 3 is: *Monitoring activities—both those under way and additional ones that will be needed to comply fully with the Protocol—should be directed to answer important national and international governance questions, and designed and conducted on the basis of sound scientific information with independent merit review.* The legislation (Section 8) provides for development of regulations on monitoring that measure impacts from activities allowed following a comprehensive environmental evaluation (CEE), or an initial environmental evaluation (IEE). Section 8 also provides for flexibility in the rulemaking process. The CAPS report (page 56) provides guidance for the design of future monitoring activities.

The fourth recommendation of the Committee dealt with the matter of logistics (e.g., ships, planes, personnel) for supporting the requirements of the Protocol as well as carrying out scientific programs in Antarctica: *Where more efficient operational modes can be identified, they should be implemented quickly and the savings applied to the conduct of science and to meeting the needs of the Protocol.* This recommendation is not addressed by the draft legislation, but it could perhaps be included in Section 11 on Oversight. The Committee suggests it might be prudent for NSF to continue to reevaluate annually the appropriate number of personnel, aircraft, and ships used each year for logistics and support with particular emphasis on cost effectiveness.

Recommendation 5 has four parts. The first (5a) is: *The existing management relationship between the National Science*

Foundation and the research community should be essentially unchanged. That is, the current pattern of submittal of proposed research projects and their approval, funding, and oversight, should remain intact, modified only as new scientific and environmental requirements might suggest. The draft legislation would not alter this relationship.

Recommendation 5b is: *The National Science Foundation should be granted primary rulemaking authority necessary to implement the Protocol; however, when that authority involves matters for which other federal agencies have significant and relevant technical expertise (e.g., Environmental Protection Agency for solid and liquid waste), the concurrence of those agencies must be sought and granted in a timely manner before a regulation is issued for public comment. The implementing legislation should identify, to the extent feasible, the specific instances and agencies where this would be the case.* Section 6 of the draft legislation provides for such activities.

Recommendation 5c is: *Decisions required under the implementing legislation and related compliance activities regarding major support facilities should reside with the federal agency that would normally make such decisions in the United States. For example, the Environmental Protection Agency would grant a permit to the National Science Foundation for a wastewater treatment facility and would conduct periodic inspections.* In this case, Section 5 of the draft legislation requires issuance of permits by an agency other than NSF only when an action to be taken deals with living resources. In the instance of construction or waste disposal, the draft legislation establishes a consultation process with other agencies such as EPA, leaving NSF to issue permits to itself in some matters for which such decisions would normally be made by another agency in the U.S.

Recommendation 5d is: *A special group should be established to provide general oversight and review of:*

- *proposals on the concept, location, design, etc., of major U.S. facilities, or significant alterations to existing facilities in Antarctica;*
- *environmental monitoring activities; and*
- *National Science Foundation program actions to ensure compliance by U.S. personnel (i.e., scientists and others supported by the government) as required by the Protocol and implementing legislation.*

The draft legislation (Section 11) provides for a team under the authority of the Department of State to conduct an on-site inspection of the U.S. Antarctic program at intervals of from 2 to 5 years with a view towards examining overall compliance with the Environmental Protocol. This provision does not go as far as

the CAPS recommendation (page 64 of the report) in providing continuing general oversight and review of the U.S. Antarctic program through a standing committee. An amplification of this matter is included in another question below.

The sixth recommendation is: *Legislation implementing the Protocol should not impose additional delays in the approval of scientific projects determined to have no more than a minor or transitory impact on the antarctic environment.* It appears the proposed legislation would not delay the approval of these types of projects beyond the time it takes to prepare an IEE (Section 7(2)(B)).

Recommendation 7 of the Committee was: *Legislation implementing the Protocol should contain opportunities for public involvement similar to those routinely established in domestic environmental and resource management legislation.* Public involvement will be accomplished in the draft legislation through the public rulemaking process for regulations (Section 13), the permit application process (Section 5), the availability of IEE's and CEE's to the public (Section 7), publication of reports of the oversight team (Section 11) and the opportunity for civil suits (Section 14). However, when we testified before you on this last matter, we stated that "...since U.S. legislation must ultimately be consistent with any international liability regime, the Committee suggested, and the Polar Research Board firmly believes, that the Congress may wish to defer addressing the issue of liability in implementing legislation until this international framework has been more clearly established and the negotiation of the annex has been completed."

Recommendation 8 is: *The U.S. representative to the Committee for Environmental Protection (CEP) should encourage the CEP to organize and undertake periodically an international scientific assessment of the state of scientific understanding of environmental problems and challenges in the Antarctic.* This matter, as in recommendation 2, will require follow-through by the Department of State at the international level, rather than by inclusion in legislation.

Recommendation 5(d) of [the Committee] report calls for a special group to be established to provide general oversight. -- What do you propose would be the mandate of that group, and how should it operate to achieve its objectives?

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ISBN 0-16-044141-2